PRINTING EQUIPMENT ENGINEER

- A Technical Publication for Mechanical Executives
- Responsible for Printing Production and the Selection and Care of Printing Equipment and Supplies

JULY 1932

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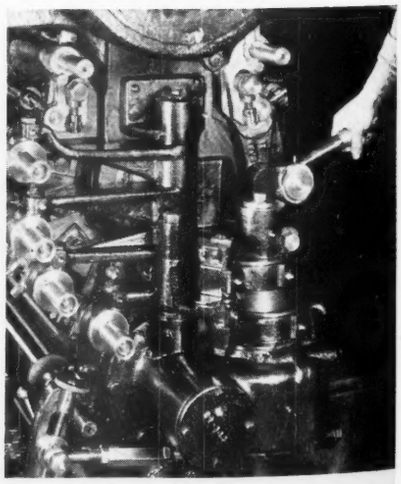

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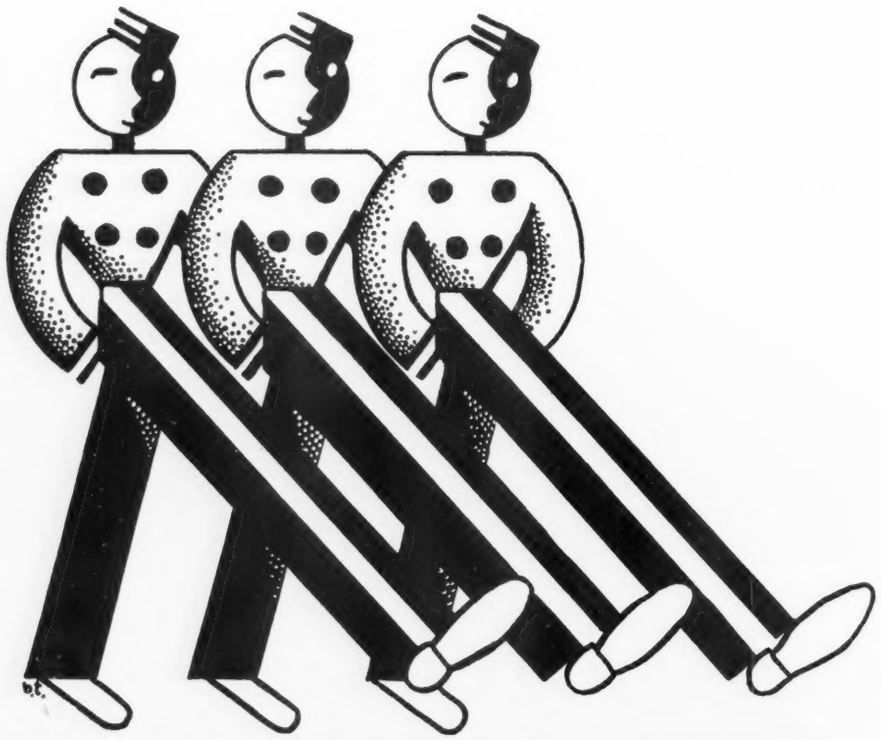
July, 1932



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Arthur S. Thompson, Manager.

PRINTING EQUIPMENT ENGINEER

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After you have read this copy, pass this magazine along to the other men in your organization. They will undoubtedly get helpful ideas from its pages.

Check in left column after reading. Note articles of interest.

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☐ *Superintendent Press Room*

☐ *Chief Composing Room Machinist*

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☐ *Foreman Lithographing Department*

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☐ *Mechanical Superintendent*

☐ *Manager*

☐ *Purchasing Agent*

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BLACK & WHITE
Contrast Matrix
"Contrast Provides VISIBILITY"

PRINTING
EQUIPMENT
ENGINEER
July, 1932

Why Rubber Rollers?

By Arthur H. Burns*

One of the essential elements of a newspaper printing press is the ink roller, the function of which is to transform the ink from a liquid body into a thin film and to evenly distribute this film over the contact surface of the printing plate. This is theoretically a relatively simple operation but in practice there are several conditions which greatly reduce the efficiency of it. These conditions may be stated to be temperature, atmospheric, and mechanical as well as that condition due to the quality of the ink and paper used in printing.

All concerned in newspaper printing are painfully aware of the low resistance to change in temperature possessed by the composition roller and of the practical disregard of such changes that is now possible with the rubber roller. Neither a high nor low temperature now effect the printing obtained with rubber rollers and what is more important there is no capital loss in summer and winter as formerly with the composition roller. The same agreeable qualities are again experienced with changes of moisture content in the air. The rubber roller sheds water without suffering the least harm as opposed to the total loss of the composition roller in extremely damp and dry air conditions.

The third condition of roller operation is not common to all plants. Some operators set rollers as accurately as possible while others too often let them attempt to do their work with only a minimum of attention. A rubber roller many times seems to require very particular adjustment but once set in proper relation to the drums and plates will require much less adjustment than the composition roller. One paramount requirement in connection with rubber roller adjustment must not be overlooked and this is due to the change which takes place in the rubber itself on contact with the oil in ink. This change is a consistent regular swelling of the rubber in the first few weeks of operation. Adjustments must be made each week for several weeks or until the swelling is practically completed. The roller will then run for a year with only cursory attention. After a year's operation the roller will be found to have a diameter from 5% to 10% greater than when originally installed and it should then be ground to the original size. Some operators experience trouble in special conditions where rollers are in contact with plates for only part of their length thereby producing what appears to be uneven swell in the roller. This will undoubtedly occur but the operator should endeavor to equalize the contact by reversing the roller or else changing its position in order to prevent such uneven swelling.

One of the greatest problems with composition rollers was that of cleanliness. Washing up of these rollers was imperative every day and on long runs frequent washing was imperative. The adherence of paper dust and foreign matter in the ink required a cleaning of the composition roller to produce clean printing. The rubber roller, however, having particularly no "tack" for any other material than ink, throws off paper dust or other solid matter and therefore requires no washing. In using color ink it is found also that no washing is required with rubber rollers.

COMMON FAULTS AND DEFECTS

Rubber rollers received by a plant from the factory are well protected from damage and usually exhibit no defects. In some few cases the writer has met with faults consisting of improperly cured rubber on the surface or of poorly cemented covering on the steel stocks. These defects have been promptly remedied without cost by the manufacturer. In cases where rollers have been damaged in use, vulcanizing of the rubber has been performed with varying degrees of success. Factory repairs are to be recommended.

GRINDING OF ROLLERS

In grinding rollers much depends on the proper speed of grinding wheel and roller. The first operation is that of roughly cutting off the excess material. A second cutting with the wheel should be much finer and should be uniformly and carefully done. The final finishing operation with sandpaper or emery cloth should be done at a higher speed in order to insure the necessary smoothness. The writer has found an ordi-

*Mechanical Superintendent, *The Herald-Tribune*, New York, N. Y.

nary lathe of sufficient length of bed with an electric post grinder attachment to be an efficient equipment for the operation of grinding.

ECONOMY OF RUBBER ROLLERS

The initial cost of rubber rollers is much higher than the composition roller but due to its much longer life is able to show a marked economy in operation. In New York the rubber roller will cost approximately four times as much as the composition but will be operating four years after its installation with perfect efficiency. A composition roller, without regard to the hazard of loss in extremely hot weather, will require replacement due to ordinary wear approximately every six months. At the end of two years when four composition rollers have been purchased the initial cost of the rubber roller has been reached. The life of the rubber roller therefore, beyond the two-year point, is all profit, less interest charges and maintenance.

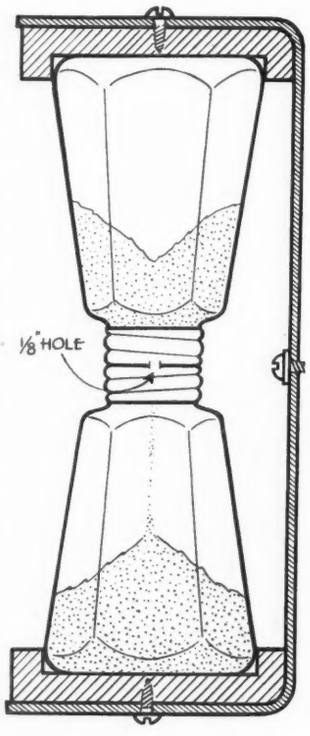
Due to the necessity of washing with kerosene and rags a proper charge against the composition roller must be made for these items. The regrinding of the rubber roller can be done for $5.00 or less and this expense over a year's time will probably not be larger than the cost of washup materials. A plant in New York over a period of four years, gradually replaced the composition rollers with rubber and in doing so reduced its roller expense in the second year to less than half its former figure. In the third year the reduction was greater and after the fourth year the amount expended was not more than 20% of what it had been under all-composition roller equipment.

This replacement was made by first equipping all presses with one form roller for each plate cylinder. This was followed by the second form roller and then on down to the distributors and vibrators. No attempt was made to install ductor rollers of rubber. An immediate improvement in printing was noticeable and as the personnel became familiar with the new rollers the average quality of printing became very much higher than with composition rollers. Records of experience and some experimentation seems necessary before rubber ductor rollers can show the same efficiency as some of the fabric-covered composition ductors although some plants can show a very good record in this respect.

Simple Scorcher Timing Device

A stereotyper friend of the ENGINEER submits a suggestion for a timing device for the use of those stereotypers who would prefer depending upon a timepiece of some kind in connection with the scorching of dry mats, as well as for use in making color plates.

Most stereotypers were taught to leave a wet mat in the steam table for a six-minute period. With the advent of the dry mat, however, the scorching period is considerably shortened. Where the scorching time is guessed, the scorcher might cause the mat to dry out too much so as to make it too hard, and if not properly dried out the mat might cause a chill in the plate on the first cast.



The device is made from two salt shakers obtained from a chain store. The caps are soldered together, and as is indicated in the drawing, a 1/8-in. hole is drilled into both caps to permit sand to trickle through after the fashion of an hour glass. The bracket is constructed of two blocks of wood which are routed out to fit the bottom of the shakers and a piece of sheet iron approximately 1½ in. wide is bent as shown in the drawing. A screw each at top and bottom of the bracket will hold the shakers in place. Another screw passed through a hole drilled in the center of the bracket iron provides a means for revolving the timing device which can be fastened to a wall or some suitable object near the scorcher.

Ordinary white sand may be used to fill and time the shakers before assembling in the bracket.

In the making of stereotype plates for color work, more accurate work and press register may be procured by handling each mat in precisely the same manner from the time it is removed from the conditioning box. This is well known to all stereotypers and needs no explanation here.

Jet Clearing Tool

James O. Austin, composing room machinist, of the Toledo (Ohio) *News-Bee*, suggests a tool for the removal of oxides and metal which clog the jets of line-casting machine mouthpieces.

The tool is made from No. 26 Malin music wire, 0.052 in. diam. The cutting end of the tool which is used for clearing the mouthpiece jets, is tapered backwardly from the end and along the shank for a distance of approximately ¼ in. Wherever half the diameter of the stock occurs along the tapered portion of the one-way angle will be found the cutting point of the tool. The tool need not be made over 2 in. in length and may be used either in a pin vise or a hand drill.

The instrument described above will stand more accidental twists and strains than either carbon or high speed drills or tapered broaches which are commonly used for the purpose of restoring mouthpiece jets to their original inside diameter.

Economical Plant Management Discussed at Mechanical Meeting

THE principal matter under discussion at the sixth annual conference of the Mechanical Department, A. N. P. A., held in Cincinnati, June 7-8-9, was economy of operation in the composing, stereotype and press-rooms of the newspaper plants represented by the delegates attending the conference.

The demands of the publisher for economical plant management in the face of declining revenue caused the delegates to respond in lively fashion at the various sessions. Labor discussions, however, had no part in the proceedings. Only three prepared papers were read, the rest of the convention time being spent in informal discussion of meeting the problem of printing better newspapers while operating under decreased budgets.

An address of welcome was made by Wm. F. Wiley, general manager of the Cincinnati *Enquirer*.

H. D. Ashby, Cleveland *Plain Dealer*, presided at the first session, during which B. L. Wehmhoff, technical director of the Government Printing Office, presented his third progress report on the study of newsprint and news ink. This report will be published in the ENGINEER in abstract form.

Mr. Wehmhoff stated, among other things, that the problem of producing an oil (for news ink) in commercial quantity which will eliminate "strike through," has been solved to a large extent. The next problem is to devise specifications and tests to enable the oil refineries to control the supply to the ink maker, to insure the ink maker that the correct oil is being delivered, and to provide specifications and methods of testing news inks for use by the publishers.

A discussion on standardized newsprint specifications was provoked by Mr. Wehmhoff's report. W. G. Phillips, Oklahoma City *Oklahoman and Times*, said if it were possible to arrive at correct specifications, newspapers would be able to deal more effectively with the newsprint manufacturers. L. B. Palmer, general manager of the A. N. P. A., said that this same subject of standardized newsprint had been abandoned by the association after considerable study. It seems that the idea is not practicable as the demands of various papers differ widely.

Left to right, seated: Paul Fite, stereotyper; Auburn Taylor, pressman; Maynard Wright, photo-engraver; standing, left to right: H. B. Folk, composing room, and W. F. Hill, photo-engraver, all of the Charleston (W. Va.) "Gazette." W. E. Wines, manager of the A. N. P. A. mechanical department, reports that the "Gazette" had the largest delegation in attendance at the convention of any paper outside of Cincinnati. These five men were instrumental in securing the certificate of award in the N. W. Ayer competition last year. Good craftsmanship and cooperation between departments produce one of the best printed papers in the country.

Frederick H. Keefe presided at Tuesday night's session and George W. Speyer, production manager of the J. Walter Thompson Co., Chicago, spoke on "What the Agency Does in the Preparation of a Newspaper Campaign." Each step the agency takes in executing an advertising campaign was described. In speaking of the check made by the agency on printing and position of advertisements, Mr. Speyer said:

Left to right: D. H. Boyce, A. N. P. A. chemist, Government Printing Office, Washington, D. C.; B. L. Wehmhoff, technical director, Government Printing Office, Washington, D. C.; W. E. Wines, manager, mechanical department, A. N. P. A. Mr. Wehmhoff presented his third progress report on the study of news ink and newsprint. He is assisted in this work by Mr. Boyce and D. P. Clark, chemist, photographed at the Mechanical Conference, Cincinnati, June 7-8-9.

"A check is made covering the linage of each advertisement as printed. The advertisement is measured as shown on the tear sheet. Payment is usually made from tariff or cut-off rule to tariff rule. It is not advisable for a publisher to cut apart an advertisement and respace it in order to take care of shrinkage, because by so doing the publisher destroys the fine balance and spacing painstakingly adjusted by the art directors.

"It is suggested that the best practice for the publisher is to insert the national advertising as received in plate form, then add the cut-off rule top and bottom without adding any white space except as called for in the copy and copy instructions, then bill as per depth actually printed. This procedure will eliminate most of the complaints on billing or requests for credits so prevalent in the past between the agency, advertiser and publisher."

H. D. Ashby, Cleveland *Plain Dealer*, asserted that in his opinion the agency should not specify the exact number of lines, but rather should specify "three-column by depth,"

Radio

IN THE early days of the radio many people were against it. These included both listeners and performers. One heard such sentiments as, "I wouldn't have a radio in the house," or "I wouldn't cheapen my art by appearing before a microphone."

Because of public acceptance of the radio this prejudice has quietly faded. Artists eagerly accept contracts to perform and listeners hasten to buy receiving sets.

That is the history of many new ideas and labor-saving devices.—*William Feather.*

Bottom row, left to right: Roy Bush, Ashtabula (O.) "Star-Beacon;" Wm. T. Schneider, San Diego (Cal.) "Union and Tribune;" George M. Dieterich, Aurora (Ill.) "Beacon-News;" H. J. Lowe, Kewanee (Ill.) "Star-Courier." Second row, left to right: H. H. Henes, L. Bruce and H. Healy, Ashtabula "Star-Beacon;" C. L. Arnall, Lexington (Ky.) "Leader;" Norman P. Miller, Lexington "Herald," photographed at Cincinnati conference of the Mechanical Department, American Newspaper Publishers' Association. The attendance at the conference was nearly normal. This is pleasing in view of the fact that other conventions this year seem to be only within 20 per cent of normal as compared with the last few years.

"five-column by depth," etc. Mr. Speyer said the advertising campaign was planned as described and the national advertiser is not concerned about the shrinkage problems of the newspaper.

Leonard C. Michaels, Cleveland *Plain Dealer,* said his paper followed agency orders as given. "If the agency specifies three by ten we make them three by ten," he said. "If they order three by plate we make them that way."

F. H. Keefe, publisher of the Newburg (N. Y.) *Beacon-News* and chairman of the Joint A. N. P. A.-A. A. A. A. committee, said the committee is working to ease the situation whereby the agencies would not ask the impossible of newspapers.

Mr. Keefe then introduced Dwight L. Monaco, of the Gardner Advertising Co., New York and St. Louis, who succeeds Joseph M. Farrell, recently resigned. In a few remarks Mr. Monaco urged that newspapers cooperate with the agencies and advertisers in printing their copy as wanted.

When the discussion on color printing came up, John W. Park, Chicago *Tribune,* said the use of color is increasing. The *Tribune,* so far this year, has printed 35 two and three-color run-of-paper advertisements, about seven full pages in the comic section and is printing one to three four-color rotogravure advertisements every Sunday. Mr. Park also stated that the *Tribune's* facilities for color printing enables them to secure some advertising accounts which might not otherwise be obtainable.

At Wednesday morning's session (John W. Park, chairman), R. J. Barrett talked on composing room management and economy. Mr. Barrett drove home to the executives the need of workable statistics as a means for knowing composing room costs.

"Some foremen think that because the business office keeps all the statistics, why should they bother? The business office does keep them but they are not compiled for the purpose of holding your position for you or for your advancement. These same statistics have proved to be a boomerang to many foremen the past two years, particularly the last five months," was one of the high points of Mr. Barrett's talk.

Mr. Barrett also stated that foremen themselves are responsible for one line of thought today regarding newspaper production, *i. e.,* practically every publisher believes the easiest way to cut production costs is to increase the number of lines each news operator sets. The reason for this is that every foreman has statistics on lines of news matter set because they are the easiest statistics to assemble. News operators average only 27 men out of each 100 employes. If a foreman would devote as much time assembling facts on how the other 73 cents is spent, he would receive more cooperation from the management when he tries to improve conditions.

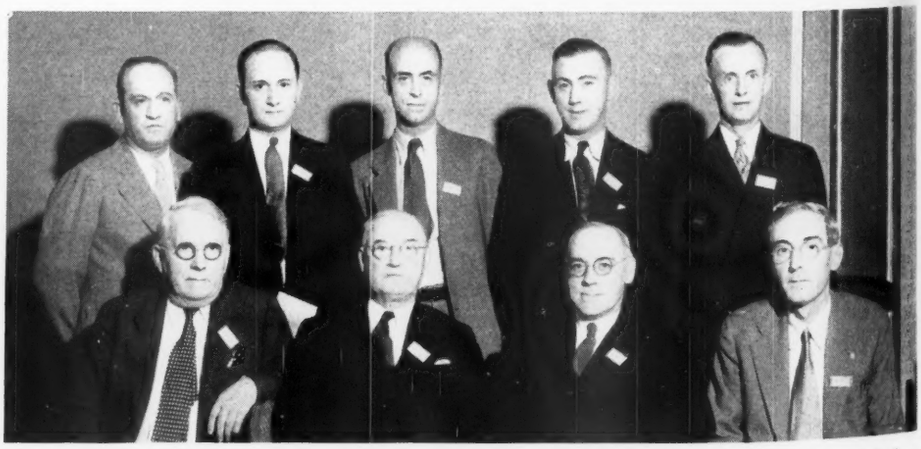
Immediately after Mr. Barrett's address, Composing Room Superintendent G. W. Holloway, Nashville (Tenn.) *Banner,* described in detail the results obtained by engaging the services of an auditor in the composing room to keep a daily account of the operations. As a result of finding where the leaks were, the page costs have been materially reduced.

In one instance, Mr. Holloway cited where it was determined that the cost of setting and correcting a five-column grocery advertisement was $50, largely on account of store alterations and corrections after the proof was submitted. That advertisement now costs $18 to set, since an understanding has been arrived at whereby the advertiser pays for the changes.

In the ensuing discussion it was discovered that nine newspapers represented made charges for changes while 36 did not make charges.

When it was found that changing advertising matter cost the Milwaukee *Journal* between $25,000 and $35,000 per year, Mr. Keating said that his newspaper started charging for corrections.

Arthur H. Burns (New York *Herald-Tribune)* presided at the economy session Thursday. He said that since many papers were reducing column widths to twelve ems, that a smaller stereotype mat should be available. W. E. Wines, manager of the mechanical department, agreed with Mr. Burns' observation and said that his recent survey shows a big increase in the number of papers changing to twelve-em column. In the ensuing discussion on mat wastage, Otto



Bottom row, left to right: I. E. Tessier, Columbus "Dispatch;" H. D. ("Bob") Ashby and Henry J. Graham, Cleveland "Plain Dealer;" S. J. Gilcrest, Newark (O.) "Advocate." Second row, left to right: H. F. Lybarger, Columbus "Dispatch;" R. B. Miller, Bloomington (Ill.) "Pantagraph;" Mac Sinclair, Cleveland "Plain Dealer;" Melville T. Parkinson, London (Ont.) "Free Press," and Leonard C. Michaels, Cleveland "Plain Dealer."

Kurrle, Moline (Ill.) *Dispatch*, said that up to 13 per cent on mat cost could be saved by the publishers if the manufacturers would furnish mats to specified sizes. A resolution was adopted instructing the mechanical committee to confer with mat manufacturers to see what can be done to adjust the sizes of mats to various newspaper page sizes with a corresponding reduction in the cost of the mat.

At Wednesday night's meeting, E. J. Duffy, mechanical superintendent of the New York Daily *News*, presided. Discussions on pressroom and engraving topics occupied the entire session. Rubber rollers, in the opinion of those taking part, are superior to composition rollers. Charles H. Ruth, Washington *Star*, said that previous to three years ago, the *Star* had a roller expense of $5000 a year. At the present time, due to the gradual substitution of rubber rollers this expense has been completely eliminated.

Mr. Duffy stated that the *News* is using the original rubber rollers which were installed on the color presses eight years ago and that they are now "better than ever." Auburn Taylor, Charleston (W. Va.) *Gazette;* W. J. Phillips, Oklahoma City *Oklahoman and Times;* J. Q. Harding, South Bend (Ind.) *Tribune*, and others, also said that age improves rubber rollers.

For newspaper halftone engravings, it was the opinion of those participating in the discussion that the 65-line screen gives the best results, inasmuch as its use provides more detail.

A resolution addressed to the A. N. P. A. board of directors was passed, asking for a wider distribution of the *Bulletin* issued by the mechanical department. If the request is approved, the *Bulletin* will be sent to mechanical department heads of all member newspapers.

A new feature in connection with this year's convention consisted of displays of new mechanical devices in the ball room corridor. The Teletypesetter was in operation before and after sessions. The Howey electric photo-engraving machine, the Bekk paper surface tester, the Baumrucker paper opacity tester, the Zenke plate gauge and the "Perfect" proof press were also exhibited.

Illinois Executives Meet

THE spring meeting of the Illinois Composing Room Executives' Association was held at the Hotel Lincoln-Douglas, Quincy, Ill., June 18 and 19. About one hundred members were present from all sections of the state.

The Sunday morning program was in charge of President Bert B. Manning of the Peoria *Star*. Frank Bauer, composing room superintendent of the Quincy *Herald-Whig*, acted as master of ceremonies.

Mayor J. Emmett Wilson made the address of welcome.

Charles F. Eichenauer, editor of the *Herald-Whig*, addressed the group during the morning session on the subject, "All of Us Together." A poem written by Frank A. Bauer entitled "Stereotypers' Troubles" was read by "one of them," Oscar Eggeson, stereotyper of the *Herald-Whig*.

Dinner was served at noon. Dinner music was furnished by a trio composed of Enid Ireland Thompson, piano; Mrs. Lee Wright, cello; and Martha Granacher Morris, violin.

Mr. Sherman Irish, mechanical superintendent of the *Herald-Whig*, was chairman of the morning program. The afternoon session was presided over by President Manning.

The fall meeting will be held in October at Joliet.

Economy programs were discussed. Several newspapers are cutting down from 12½ to 12 ems, effecting savings in newsprint.

"The Machinist Talks," was led by John Peiffer, machinist of the Bloomington *Pantagraph*, and C. D. Cornthwaite, machinist of the Springfield *Journal*. "Composing Room Problems" were discussed in a talk made by Harry M. Scott, Decatur *Herald-Review*. The remainder of the afternoon was spent in general discussions.

N. O. W. Johnson of the Moline "Dispatch," is the New Vice President of the Illinois Executives' Association.

Russell B. Miller, Assistant Superintendent, Bloomington "Pantagraph," Was Elected President, Having Been Promoted from the Office of Secretary-Treasurer.

Meet the New Secretary-Treasurer of the Illinois Composing Room Executives' Association—Earl E. Anderson, of the Consolidated Newspapers, "Register-Republic-Star," Rockford.

Officers for the coming year were elected as follows: President, Russell B. Miller, Bloomington *Pantagraph;* vice-president N. O. Johnson, Moline *Dispatch;* secretary-treasurer, Earl Anderson, Consolidated Newspapers, *Register-Republic-Star*, Rockford; directors, George Bolton, Joliet *Herald-News*, and Leon V. Gonigam, *Republican-Times*, Ottawa, Illinois.

Progress In Offset Printing

By OTTO R. TRAMPUSCH*

Most of the large printers in Europe, as well as some in England, have separate departments for typographic printing, for rotogravure and for offset lithography, and they use each of their departments according to its best advantage.

Here in the United States, however, printing concerns are more specialized, being printers or lithographers or rotogravure houses, having at the most two of the three processes.

Offset printing is a form of printing from planographic plates covering the whole cylinder, whereby the image is first transferred on to a rubber-blanketed cylinder and thence to the web or sheet of paper passing between this rubber-blanketed cylinder and an impression cylinder.

Many printers ask: What are the commercial advantages of the different methods of printing? What is the difference? What is the saving in makeready and production, etc.?

Typographical rotary presses for printing magazines require the best attention in making perfect curved plates or otherwise require many hours for overlay or underlay, besides the time requiring for attaching individual plates to the cylinders. This makeready time is eliminated in rotogravure and offset printing.

For example, in rotogravure printing, on account of printing from a solid intaglio-etched copper cylinder, makeready time is nil. Of course, some of the makeready time which is thus saved is taken up again by the time required to make corrections to the copper cylinders by reason of possible lack of uniformity in the etching.

In the offset process, with the various designs correctly positioned on the plate covering the whole cylinder, very little underlay is required in getting the proper contact in order to create an even kiss impression on the rubber blanket.

*Engineer, R. Hoe & Co., New York, N. Y. Paper delivered before the Third Conference, Printing Industries' Division, A. S. M. E., New York City, March, 1932.

In rotogravure presses the web is dried after each individual color is printed by means of steam-heated drums, air blowers or electric heating elements. Rotogravure printing allows more depth of tones, but loses in register in color printing on account of the long run of the web between the various units. On the other hand, offset colors may be printed overlapping in succession up to four colors around one common impression cylinder without drying the web between the various units, thereby obtaining hairline register.

Web rotogravure is printed from an intaglio-etched copper cylinder whereby the dots in each screen square are of the same size. However, the solids or 100 per cent depth of such dots are etched as deep as 0.004 in., halftones being etched 0.002 in., and the high-light dots etched very shallow, giving the finest photo-tone effect. In lithography the dots are in the screen square of different sizes according to the tone value required.

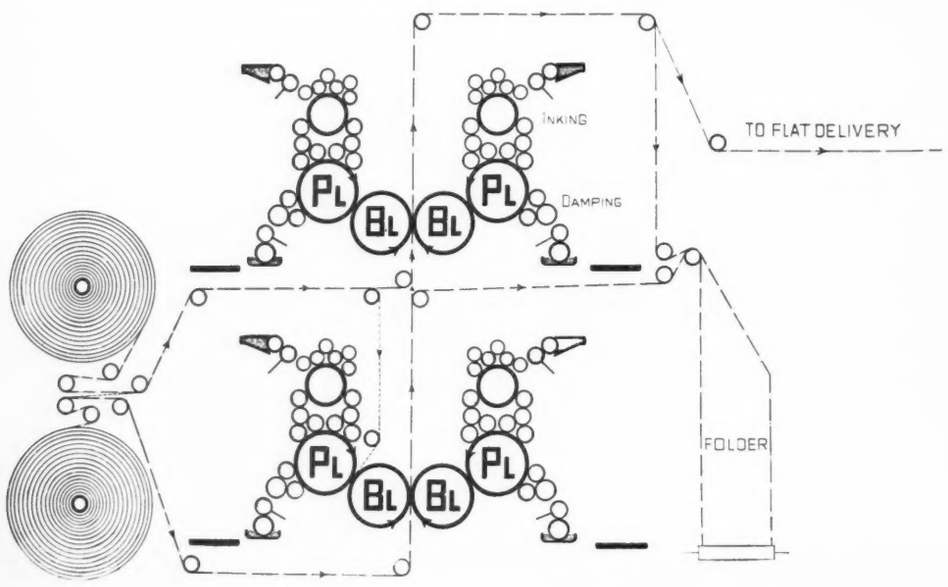
In the method of printing multi-color gravure, it is very hard to keep uniformity of printing results due to the constant changing of color because of the evaporation of a certain amount of the ink and due also to a certain extent to the wear of the etching.

A marked improvement in offset printing, both as to quality and life of plates, has been made by the practical introduction of the deep-etched plate in connection with the positive retouch process. Planographic plates, either albumin-coated or hand-transfer, have the dots laid on the surface of the grain. The design on the high points of the grain of planographic plates is gradually lost due to the wearing down of the grain, while on the so-called "deep-etch offset plate" the design is etched in the plate at a uniform depth all over the plate to about 0.0005 to 0.001 in. underneath the bottom of the grain, thus insuring uniformity of printing throughout the run. Deep-etched plates require considerably less dampening, thus prolonging the life of the plates, plus increasing the brilliancy of colors, since in this process the design has a definite outline formed by the dot cups, which need not be protected by water, and the rest of the plate requires only enough water to keep ink off the grain. Up to 400,000 impressions have been obtained from such plates, and a good average of 250,000 impressions is not uncommon. A design made up of graduations from the finest high light and solids can be run without any sacrifice of color, and the results obtained, in uniformity and appearance, are superior to those obtained from the ordinary planographic plates. Type work on all grades of stock is superior in appearance to typographical printing.

In making an offset-press plate for a planographic press, a negative is required as a print-down medium, and for a deep-etch plate a positive is required, both halftones.

To Be Continued

HOE TWO-DECK WEB OFFSET PRESS



Why Spacebands Bend

By Mac Sinclair

No part of a line-casting machine receives more severe usage than the spacebands. For this reason the spacebands should receive the daily polishing required, together with periodical attention to the conditions which are conducive to the bending of the wedges.

The bending of the wedges usually occurs during the justification of one or two-spaceband matrix lines of narrow em measure which have been tightly spaced by the operator. Spacebands do not seem to bend as readily in tightly-spaced matrix lines of wide measure when there are only one or two spacebands in the line.

Two purposes are accomplished when the spacebands are given their daily polishing: The removal of the oxide stain and metal accumulation at a point on the sleeve which is always adjacent to the matrix character cell, so the oxide spot cannot be built up after several hours' use, which if not removed would crush in the delicate side walls of the matrix cell; the other purpose accomplished in polishing the spacebands with dry graphite is to provide a means of lubrication between the wedge and sleeve in order to minimize friction between the two parts.

The following list represents most of the causes for the bending of spaceband wedges during justification of a matrix line:

(1) The operator has justified the matrix line so tightly that the wedge does not make an upward movement when struck by the justification bar.

(2) A spaceband is impinged by a screw head protruding from the mold body.

(3) The mold slide adjustment (which should permit the mold to advance normally to within 0.010 in. of the vise jaws) has been set so that the mold binds against the matrix line after the first forward thrust of the slide.

(4) The first elevator back jaw has been deflected inwardly.

(5) Loose graphite upon the striking surface of the justification bar can cause bands to be deflected sidewise. Free graphite may accumulate on the bar because of its careless use when polishing the vise jaws, or because all the free graphite has not been shaken from the spacebands after they have been polished.

(6) Neglect in daily polishing of spacebands with dry graphite so as to minimize friction between the wedge and sleeve.

(7) Bottoms of wedges have become rounded through long use. The wedge bottoms may be squared with a fine pillar file, but this should be an extremely infrequent operation.

(8) The spaceband has lost its temper because it has been immersed in molten metal to separate it from a "soldered" matrix line after a squirt has filled in the matrix tooth recess, or the spaceband wedge may have lost its temper due to age.

(9) The justification bar has become polished along its length where the bar most frequently engages the wedges. This is a common cause for the bending of wedges.

(10) The justification lever cam roller, pin and the justification cam itself have become worn after a long period of time so that the justification bar engages the spaceband wedges at the point in the revolution of the machine where the first elevator seats at casting position upon the vise cap. When the machine is new the space between the top of the justification block and the lower ends of the wedges is variously estimated at from ¼ in. to ⅜ in. This spacing may be restored to its original measurement by applying an oversize (⅛ in.) justification lever cam roller which can be purchased from the supply houses.

(11) The justification spring tension is too strong for the length of line cast.

As has been previously stated, the important item is to polish spacebands religiously in order to minimize friction between the sleeve and wedge and to see that all free graphite is shaken from the set before restoring to the machine.

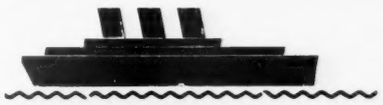
The next important thing to consider when spacebands are frequently deflected by the justification bar is the condition of the striking surface of the bar.

When spacebands justify, the long wedges slip to the left slightly as well as upwardly, in order to expand the matrix line to the limits permitted by the position of the vise jaws. It is this sidewise repetitive motion day after day which causes the two highly polished lines to appear on the surface of the bar. This action also rounds the lower ends of the spaceband wedges in the course of time.

The most frequently employed method of conditioning the top of the justification bar is by means of a surface grinder. If a Browne & Sharpe grinder is used, the finishing cut may be taken with the table feed set at No. 2 position on the dial. The bar should be mounted

NOVEL EFFECT TO BE OBTAINED FROM RULE

This modernistic tid-bit was devised by Victor H. Smith, typographer, Cleveland, Ohio. In constructing the ornamentation, Mr. Smith used Monotype strip



material as follows: Two pieces of 12-pt. rule, two pieces of 3-pt. rule and one piece of 4-pt. wave rule on 6-point body, all 12 ems wide. The work was done on a Miller saw-trimmer.

upon the work table so that the cutting stroke of the grinding wheel will run crosswise of the bar.

The ideal condition for the top surface of the justification bar seems to be a fine grain, possibly of a coarseness which would correspond to a 95-line screen halftone. No attempt should be made to roughen the bar by holding it against an emery wheel with unsupported hands.

James Austin, machinist of the Toledo (Ohio) *News-Bee*, proposes to resurface the top of justification bars by an etching process, after the bars have become polished from contact with spaceband wedges.

The solution used consists of

Iron chloride, 50 per cent.
Nitric acid, 50 per cent.

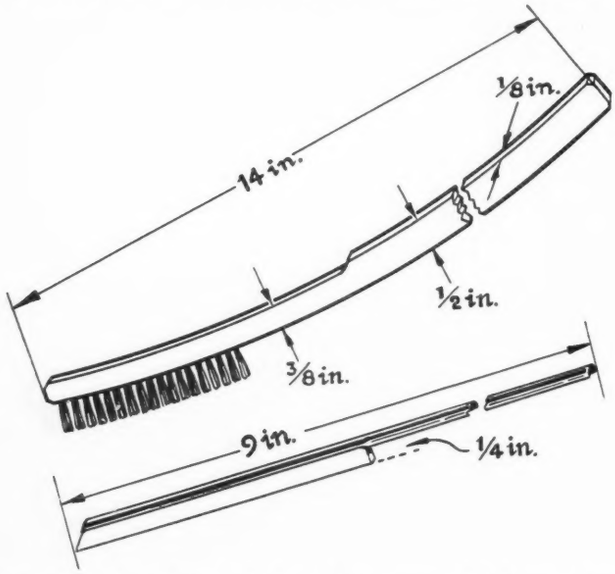
placed in a suitable shallow tray. Approximately 18 min. are required to etch a bar properly when the solution is strong. A somewhat longer time will be required after a number of bars have been etched in the same solution. The solution etches fine pits in the surface of the bar which effectually prevent slipping of the wedges during the strain of justification.

Before etching, thoroughly clean the striking surface of the bar with abrasive cloth. In order to make it chemically pure, cyanide of sodium may be employed to clean the surface which is to be etched. However, rinse off all traces of the cyanide thoroughly before immersing in the etching solution to avoid generating prussic acid gas.

The bending of wedges in those lines which contain only one or two spacebands is sometimes caused by the pitch or angle of the justification bar, that is, the justification cam may have been cut by the cam roller and at the same time the vise closing cam diameter has been preserved so that the right side of the bar is tilted somewhat higher than its normal position. It is probably safe to assume that the justification bar should tilt downwardly from right to left at an angle not to exceed 5 deg. If the bar tilts at a greater angle a steel washer 5/8 in. o. d., 3/8 in. hole by 1/8 in. thick may be slipped over the shoulder at the upper end of the justification bar brace. The original angle of the bar, however, should be preserved to insure a tight lockup justification of the matrix line. When a machine is first received from the factory the justification spring tension is set of sufficient strength to justify lines of the maximum capacity of the machine. It is advisable, where there is much short-measure composition, consisting principally of matrix lines containing just a few spacebands, to ease off the justification spring tension.

Brushes Aid the Machinist

THE channel entrances of line-casting machines need attention occasionally in the way of polishing certain channels in the partition plate. This is true in those plants which are located in the immediate proximity of rivers, lakes or large bodies of water, where saturated air seems to corrode the highly polished surfaces of the plates over which matrices slide when dropping from the distributor into the magazine. In some instances, too, channel entrance partition plates may become gummy enough to prevent the lively passage of matrices through carelessness in oiling machines which would naturally cause matrices to clog the entrance channels, such as lower case "e," "t," "o," "n," thin space, etc.



The curved-handle brush shown in the drawing was constructed of aluminum by a brush-maker and black bristle tufts were inserted in one end of the handle. These tufts are approximately 3/8 in. long, but can be trimmed by the machinist to suit the curvature of the partition plates which varies on the different models of linotypes and intertypes. It is understood that this brush was first devised for use on Model 9 and 26 channel entrances by a machinist, Fred Gilmore, in the composing room of the New York *Times*.

The polishing device shown in the lower part of the drawing was made by William Redfield, machinist of the Cincinnati *Enquirer* composing room. The handle is made from a piece of umbrella rib which was annealed to the length of a 3-in. piece of 1/12-in. felt. The felt was inserted in the open space in the rib and the annealed part clamped against the felt in a bench vise. This tool was made for polishing channels in the partition plates of Intertypes.

Announce Change of Name

The officers and directors of Western Pipe and Steel Company of Illinois have announced a change in corporate name beginning June 1, from Western Pipe and Steel Company of Illinois to "Wepsco Steel Products Company."

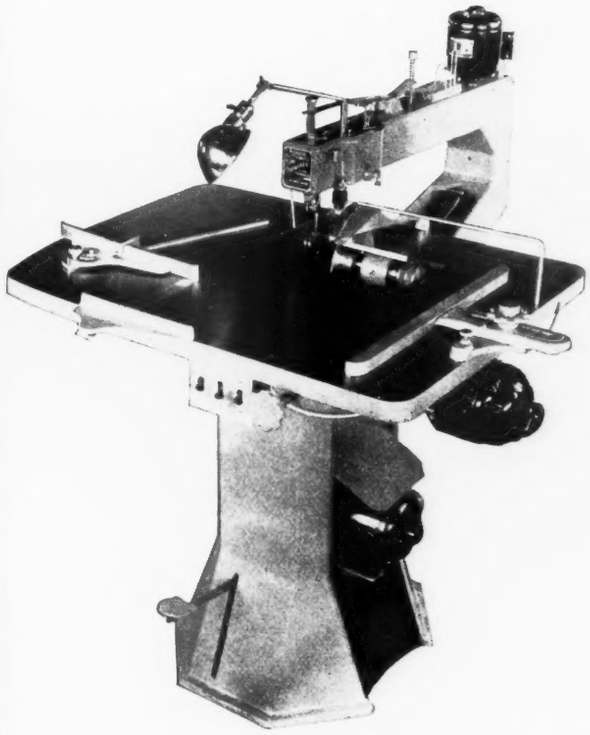
The change in name was influenced by a desire of the management to make its corporate name more indicative or representative of its products.

Latest Printing Equipment Mechanisms

Richards' Electromatic Super Diemaker

At the Paper Box Makers' Exposition at Detroit, J. A. Richards, the saw maker, Kalamazoo, introduced the new electromatic Super Diemaker, for the Box Making and Steel Rule Die trades.

The main feature of this new machine, aside from its super size is the idea of operating each part with individual motors, making for instant control. The drill and router are operated by a powerful high torque motor; the circular saw is operated by a synchronous speed motor with tandem vee belts, and the jig saw has a Timken bearing, herringbone gear, speed



reduction motor. The table, made of nickel non-warping iron, is 32 x 42 in. and the jig arm has a throat capacity of 30 in. When desired, reversible jig heads can be furnished to give unlimited capacity sideways through the machine. This arm also opens up completely to the left of the table for unlimited length boards on the circular saw. The machine ready for shipment weighs over half a ton.

These new electromatic machines are built in four models: the Super Diemaker, the smaller size Multiform Diemaker, the Electromatic Universal Composing Room Saw-Trimmer, and the Composing and Die Room Combination.

New Hoe Sheet-Fed Rotary Typographic Presses

Three of the new Hoe Sheet-Fed Rotary Typographic Presses are operating in the new McGraw-Hill plant, New York, and are printing, among other things the major part of *Home and Field*. This magazine is considered one of the finest examples of printing on sheet-fed rotary presses. The manufacturer claims it is run at a speed in excess of 3000 per hour.

Presses of this type produce high quality black or multicolor typographic work, such as magazines, books, pamphlets and periodicals, at relatively high speeds, and are also suitable for telephone-book work, catalogs, almanacs, farm journals, mail-order catalogs, etc.

These machines are adaptable where editions are not sufficiently large enough to warrant the installation of a web press, or as an auxiliary to a web press to print the smaller sections or signatures. The possibilities of this equipment will be of interest to the proprietors and superintendents of printing establishments.

These presses are equipped with Dexter automatic pile feeders and automatic lowering pile deliveries.

The side frames, delivery frames, motors, etc., are securely fastened to bedplates of ample depth and area to distribute the weight of the press over a sufficient floor space to assure rigidity and permanent alignment. These presses are extremely heavy and rigidly built with side frames of solid high-test alloy castings.

These machines are driven by a standard worm and gear reduction unit directly connected with the main motor by flexible coupling. The main motor is out of the operator's way and is easily accessible for cleaning and oiling.

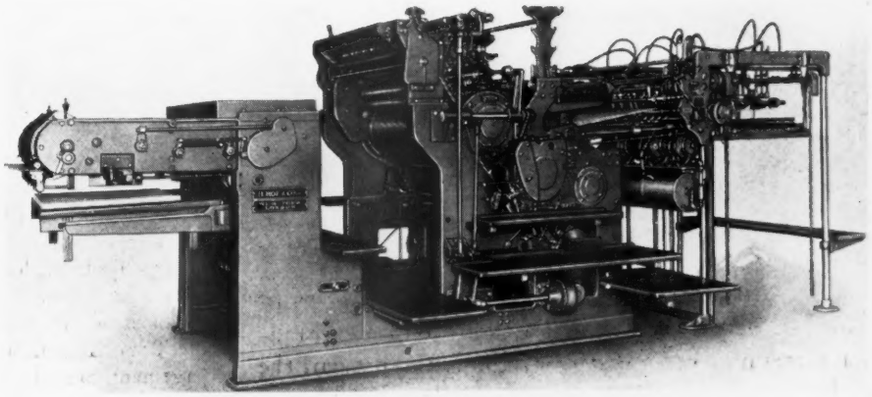
The printing is done from electrotype or stereotype curved plates on spiral grooved cylinders. All cylinders are made of high-test alloy castings, ground true on their own journals and both dynamically and statically balanced and run in extra-heavy roller bearings. The helical cylinder gears have teeth cut by the generating process.

The inking motion has five ball-bearing form rollers, located above the plate cylinder. This arrangement leaves both the plate and impression cylinders easily accessible for plating, removing of plates and make-ready.

The ink supply is regulated by an adjustable ratchet mechanism. The rotation of the fountain roller is stopped automatically when pressure between the printing cylinders is released.

Another feature is the cylinder trip, whereby the presence of a sheet placed squarely against the front guides automatically puts pressure on between the cylinders, and when a sheet is not presented properly or at the right time, the pressure goes off automatically. The pressure may be held on or off by inserting a pin for this purpose. The impression cylinder is not disturbed when a sheet is missed or improperly placed against the front guides, but the plate cylinder will trip automatically, and as the form rollers and the ink fountain trip automatically when the cylinder trips, there are no partial prints or accumulations of ink. No adjustments for pres-

(Continued on page 25)



June Printing Patents

Printed Copies of Patents are furnished by the Patent Office at 10 cents each. These may be obtained by addressing the Commissioner of Patents, Washington, D. C.

1,860,361. PREREGISTERING MEANS FOR PHOTO-COMPOSER PRINTING PLATES. William C. Huebner, Chicago, Ill., assignor to Huebner-Bleistein Patents Company, Buffalo, N. Y., a Corporation of New York. Filed Oct. 31, 1928. Serial No. 316,284. 10 Claims. (Cl. 33—184.5.)

1. In a registering apparatus, the combination with a supporting frame; of an attaching member for a negative holder having means thereon for positioning and locating a holder with respect to the attaching member; registering means coordinated with the travel lines of the machine with which the holders are adapted for use; means whereby said registering means may be brought into predetermined relative position and location with respect to an attached holder; and means for effecting definite relative adjustments between the attaching member and registering means to thereby bring the center lines of a holder always in the same relation with respect to the register means.

1,860,496. INKING MECHANISM. Michael A. Droitcour, Providence, R. I., assignor to Harris-Seybold-Potter Company, Cleveland, Ohio, a Corporation of Delaware. Filed Dec. 22, 1928. Serial No. 327,772. 7 Claims. (Cl. 101—357.)

1. In a printing press inking mechanism, ink distributing rollers, means for simultaneously rotating and vibrating same actuated from the press, means comprising a Scotch yoke for adjusting the length of the vibrating strokes of the rollers from zero to maximum as desired without disconnecting the actuating means from the press, and means for lifting the rollers to an inoperative position and simultaneously and separately disconnecting the rotating and vibrating means from the rollers without disturbing their timed relation with each other and with the press.

1,860,693. LITHOGRAPHIC TRANSFER PRESS. Frank T. Sheedy and Louis Traung, San Francisco, Calif., assignors, by direct and mesne assignments, to The Traung Company, San Francisco, Calif., a Copartnership consisting of Louis Traung, Charles F. Traung, L. H. Jackson, H. W. Johnston, Frank T. Sheedy, and H. T. Gardner. Filed Aug. 26, 1930. Serial No. 477,860. 14 Claims. (Cl. 101—33.)

1. A transfer press including a pair of side frames with a flat bad reciprocably mounted thereon, a pressure roll extending across the press above the bed, means for adjusting the pressure of the roll against work on the bed, means for reciprocating the bed under the pressure roll while maintaining the pressure of the roll in contact with the work.

1,860,765. PRINTING AND OTHER CYLINDER AND MEANS FOR SECURING SHEETS THERETO. George Thomas Baldwin, Thornton Heath, England, assignor to Rembrandt Intaglio Printing Company, Limited, London, England, a Corporation of Great Britain. Filed Dec. 3, 1929, Serial No. 411,351, and in Great Britain Dec. 11, 1928. 23 Claims. (Cl. 101—415.1.)

4. A printing cylinder split longitudinally to form at least two cylinder segments, a pivotal joint on one side of the cylinder axis, a non-pivotal joint on the other side of the cylinder axis, means disposed between the non-pivotal faces of the cylinder segments and adapted to be rocked by butting contact, a design plate superimposed on the cylinder segments as a whole and overlapping the non-pivotal faces of the cylinder segment and engageable by the rockable means so that on assembly of the cylinder segments tension is applied to the design plate.

1,860,868. TYPOGRAPHICAL MACHINE. Richard R. Mead, Queens Village, N. Y., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed June 26, 1930. Serial No. 463,896. 10 Claims. (Cl. 199—45.)

1. In a typographical machine, the combination of a matrix magazine, a base frame upon which it is removably supported, a magazine supporting member adapted to be applied to the base frame in position to receive the magazine therefrom preparatory to its removal or replacement, and means for locking the magazine in position on the base frame, the locking means being under the control of the magazine supporting member.

1,860,880. ASSEMBLING MECHANISM FOR TYPOGRAPHICAL LINE-CASTING MACHINES. Christian Augustus Albrecht, Berlin, Germany, assignor to Mergenthaler Linotype Company, Brooklyn, N. Y., a Corporation of New York. Filed May 22, 1931, Serial No. 539,262, and in Germany June 2, 1930. 5 Claims. (Cl. 199—28.)

1. Assembling mechanism for typographical line-casting machines with a spring abutment arranged at the end of the path followed by the matrices when leaving the assembler belt, characterized by the fact that the spring extends between two studs so that the spring is bent between the studs under the weight of the matrices projected against it.

1,860,882. MAGAZINE OF TYPOGRAPHICAL LINE COMPOSING MACHINES. William Edgar Aynge, London, England, assignor, by mesne assignments, to Mergenthaler Linotype Company, Brooklyn, N. Y., a Corporation of New York. Filed Dec. 12, 1930, Serial No. 501,835, and in Great Britain Aug. 20, 1930. 12 Claims. (Cl. 199—45.)

1. In a typographical composing machine, the combination with an adjustable column of magazines, of a shield carried on a stationary part of the machine and movable automatically, by the raising of the magazine column, to cover the upper ends of those of the magazines which are brought into inoperative position by such raising.

1,860,893. TYPOGRAPHICAL DISTRIBUTING MACHINE. Alfred W. F. Guest, Brooklyn, N. Y., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Oct. 1, 1930. Serial No. 485,632. 12 Claims. (Cl. 199—36.)

1. In a typographical distributing machine equipped with matrices formed with projecting ears at their upper ends at one side of their center of gravity, the combination of a line transporter having rails upon which the matrices are supported by their upper projecting ears, a second transporter to receive the matrices from the first, means for transferring the matrices from the first to the second transporter, and yielding means arranged in a fixed position to engage the matrices successively during their transfer to maintain them in an erect position.

1,860,900. TYPOGRAPHICAL COMPOSING AND CASTING MACHINE. Luther E. Morrison, New York, N. Y., assignor to Mergenthaler Linotype Company, a Corporation of New York. Filed Sept. 13, 1929. Serial No. 392,359. 20 Claims. (Cl. 199—52.)

1. In a typographical composing and casting machine, the combination of means for composing matrices at different levels, means for presenting the composed matrices at different levels to the mold, and automatic means for preventing the composition of the matrices except when the first two means are set in proper cooperative relation to each other.

1,860,916. LOCKING OF STEREO-PLATES OR PRINTING SURFACES TO THE CYLINDERS OF ROTARY PRINTING MACHINES. Matthias Lewis Wilkinson and Robert Bradshaw, Preston, England. Filed Apr. 10, 1931, Serial No. 529,172, and in Great Britain Mar. 17, 1931. 4 Claims. (Cl. 101—378.)

1. In a printing cylinder and in combination, printing surfaces on the cylinder, sets of locking dogs slidable in grooves in the cylinder engaging the printing surfaces, a set of screwed sleeves for operating one set of dogs, a set of screwed rods passing through the sleeves for operating another set of dogs, means on the cylinder end for supporting the rods, a gear wheel on each rod end, a gear wheel on each sleeve end, both wheels being independently rotatable and outside the end of the cylinder, a set of spindles rotatably mounted on the cylinder end one between each pair of screwed rods, two gear wheels on each spindle of the set independently rotatable and gearing with the gear wheels on the adjacent screwed rods and sleeves, the gear wheels on one of the spindles having a clutching action to provide operating mechanism for turning simultaneously all the screwed rods independently of the sleeves or all the rods and sleeves together for the purposes described.

4. In a printing cylinder operating mechanism according to claim 1 and in combination operating mechanism for the gear rods and sleeves carrying dogs wherein the clutching spindle is rotatably mounted in a recess in the printing cylinder and supported in the end plate thereof and capable of longitudinal movement, one of the clutching gearing wheels being fixed on the spindle, the companion clutching gear wheel being loose on the spindle, clutch teeth on the opposed faces of the gear wheels, a spring normally pressing the spindle so that the clutch teeth on the two wheels are in engagement, said spindle being formed with an abutment, and a spring-pressed sliding locking piece mounted to engage the abutment to hold the spindle with the gear wheels in the unclutched position, said locking piece being movable in a substantially vertical slot in the cylinder and supported on a spring, the spindle passing freely through the locking piece and having a reduced portion forming the abutment, which abutment is adapted to engage a portion of the locking teeth for the purpose described.

1,860,962. WEB CONTROLLING APPARATUS. Ernest James Smith, London, England, assignor to The Goss Printing Press Company, a Corporation of Illinois. Filed Jan. 23, 1930. Serial No. 422,763. 10 Claims. (Cl. 242—75.)

1. Web controlling mechanism including in combination a web roll support, flexible belts for tensioning the web drawn from the web roll, manually operated means for periodically taking up the slack in the friction belts as the web roll wears down and a pilot roller for controlling the friction belts and the tension of the web in the interval between manual operation of the belts.

1,861,073. INKING MECHANISM FOR PRINTING PRESSES. Henry A. Wise Wood, New York, N. Y., assignor to Wood Newspaper Machinery Corporation, New York, N. Y., a Corporation of Virginia. Filed Aug. 4, 1923. Serial No. 655,777. 12 Claims. (Cl. 101—350.)

1. In an inking device, the combination with a fountain roll and vibratory ductor roll, of a cam rotatable with the fountain roll, a cam roll connected with the ductor roll to move it and contacting with the cam, said cam having a plurality of controlling surfaces thereon each wider at one end than at the other, and means for adjusting the cam roll along the cam to regulate the duration of contact of the ductor roll with the fountain roll.

1,861,142. APPARATUS FOR APPLYING REDUCING AGENTS TO PRINTING FOUNTAINS. Peter Scherrer, Brooklyn, N. Y. Filed Apr. 14, 1931. Serial No. 529,910. 5 Claims. (Cl. 101—157.)

1. In printing presses and in combination with a printing cylinder, of an ink fountain, within which the cylinder projects, a wiper, a reducer tank, a conduit communicating with the reducer tank and the fountain, and means whereby the flow of reducer to the fountain may be controlled.

1,861,325. BOOKBINDING MACHINE. William C. Schmidt, Oak Park, Ill., assignor, by mesne assignments, to T. W. & C. B. Sheridan Company, New York, N. Y., a Corporation of New York. Filed Jan. 9, 1928. Serial No. 245,429. 11 Claims. (Cl. 154—41.)

1. In a book binding machine, means to cut a lining strip, a binding holding mechanism comprising a flexible spring finger adapted to be brought in contact with and hold a lining strip during the process of cutting and a cam actuated lever adapted to release the spring finger from the lining strip.

1,861,406. MEANS FOR GATHERING AND/OR COLLATING SHEETS OF PAPER, BOOK SIGNATURES, OR THE LIKE. Thomas Cook, Stalybridge, England, assignor, by mesne assignments, to Camco (Machinery) Limited, London, England, a Company of Great Britain. Filed Sept. 26, 1930, Serial No. 484,533, and in Great Britain Oct. 3, 1929. 3 Claims. (Cl. 270—58.)

1. A device for collating sections of paper comprising means for dividing the paper into sections, a guide channel, means for delivering the paper sections vertically into the guide channel, vertical guide members adapted to engage the edges of the paper sections, the guide members including straight sections and inclined sections adapted to move the contiguous edge of one section tranversely relative to the adjacent section, and means for moving the several sections, logitudinally of the guide channel into transverse alignment.

1,861,509. TEMPERATURE CONTROL. Howard W. Partlow, Utica, N. Y., assignor to The Partlow Corporation, New Hartford, N. Y., a Corporation of New York. Filed Sept. 3, 1930. Serial No. 479,563. 3 Claims. (Cl. 236—78.)

1. In a temperature control, the combination with a motor, a source of current supply for a motor, a switch for energizing the motor, a movable temperature predetermining gauge, and a pair of independent shunt circuits having terminals, of a contactor comprising a member connected at one end to the gauge and having its opposite end adapted to oscillate between terminals of a pair of independent shunt circuits, the contactor being normally in circuit with an electro-magnet for operating the motor switch through one of the shunt circuits to start the motor, and thermally controlled means connected to the gauge to shift the contactor into engagement with the other of the shunt circuits for short circuiting an electro-magnet to effect stopping of the motor.

1,861,609. WEB THREADING DEVICE FOR ROTARY PRINTING MACHINES. Cecil George Quick, Eltham, London, and Ralph William Chiles, Forest Hills, London, England, assignors to R. Hoe & Co., Inc., New York, N. Y., a Corporation of New York. Filed Jan. 6, 1930, Serial No. 418,898, and in Great Britain July 11, 1929. 7 Claims. (Cl. 271—2.1.)

1. In a web threading device for a rotary printing machine, a tape to which the web may be secured, pulleys to guide the tape through the machine and a driving connection whereby one of the pulleys may be connected to a rotating element of the machine; said connection being disconnectible to prevent driving the tape during normal operation of the machine.

1,861,611. STENCIL PRINTING ATTACHMENT FOR VERTICAL BED PRINTING PRESSES. William R. Respess, St. George, N. Y., assignor to John S. McMahon and J. H. Ernst, Jr., Brooklyn, N. Y. Filed Sept. 13, 1930. Serial No. 481,609. 14 Claims. (Cl. 101—123.)

1. In a machine of the character described a printing stencil and a printing platen adapted to be moved relatively thereto in printing, and a reservoir for printing medium movable with the platen, means for moving the platen with the reservoir together as a unit during a portion of the platen movement, and means for uncoupling the reservoir from the platen during another portion of the platen movement.

1,861,670. DEVICE FOR THE WORKING OF METAL BANDS, ESPECIALLY LINES, FOR TYPOGRAPHIC PURPOSES. Johannes Wagner, Berlin-neu-Tempelhof, and Walter Krostewitz, Berlin-Hohenschonhausen, Germany. Filed Aug. 27, 1930, Serial No. 478,268, and in Germany Sept. 3, 1929. 5 Claims. (Cl. 90—24.)

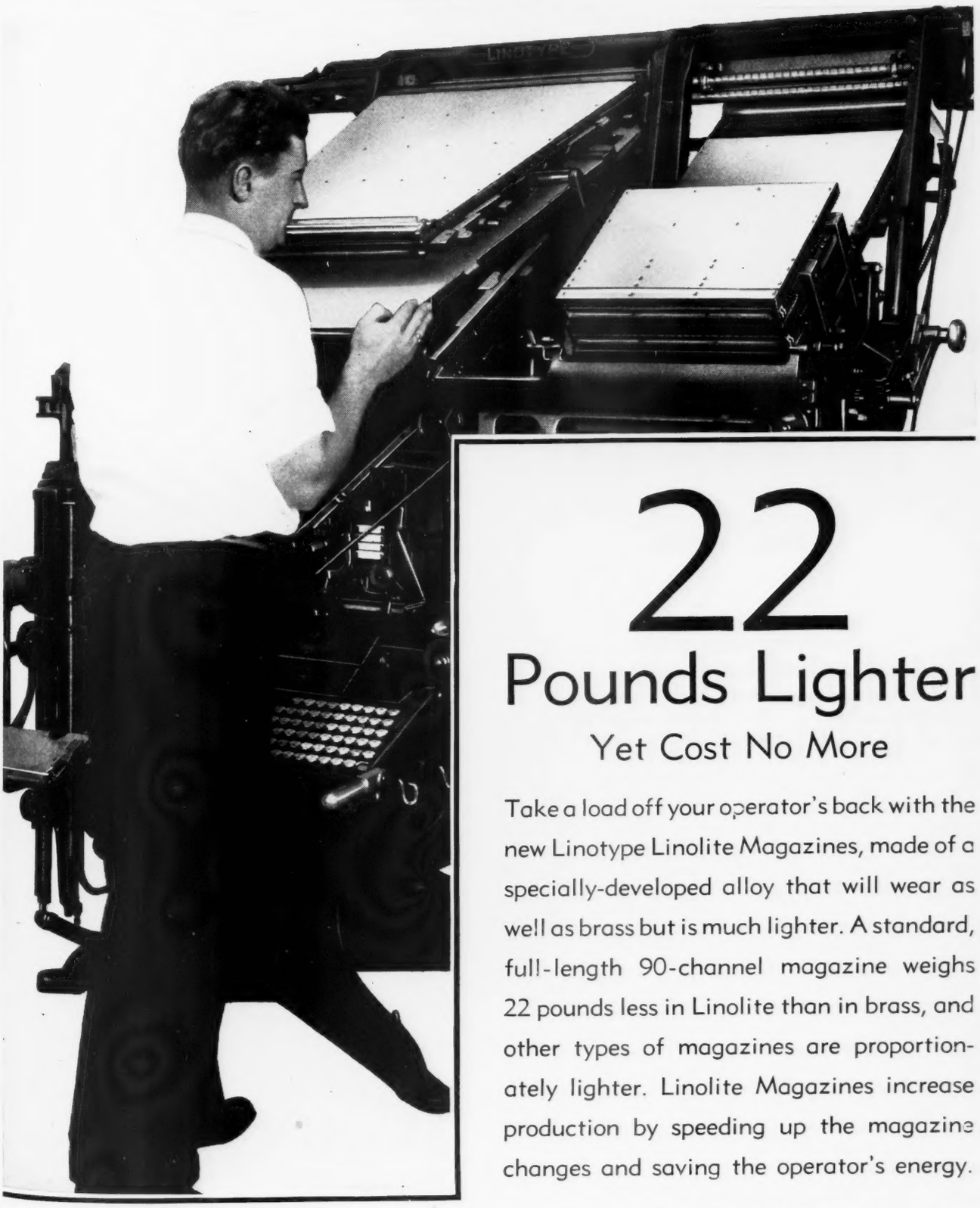
1. A device comprising in combination with two lateral members and base guide ledges forming together a guide path for a metal band, and with knives extending into the path at both sides thereof, yielding means so arranged as to be adapted to hold the band in the path, means for exerting a pulling action on the band, and transmitting members inserted between the last-mentioned means and the front end of the band.

1,861,765. BLOCK FOR PRINTING. Edward F. Tretbar, Jr., Camden, N. J. Filed Aug. 1, 1931. Serial No. 554,528. 5 Claims. (Cl. 101—395.)

1. A laminated printing block comprising a core having fixed to the opposite faces thereof plies of such relative thicknesses and characteristics that when the thicker of

LINOLITE MAGAZINES

TRADE LINOTYPE MARK



22
Pounds Lighter
Yet Cost No More

Take a load off your operator's back with the new Linotype Linolite Magazines, made of a specially-developed alloy that will wear as well as brass but is much lighter. A standard, full-length 90-channel magazine weighs 22 pounds less in Linolite than in brass, and other types of magazines are proportionately lighter. Linolite Magazines increase production by speeding up the magazine changes and saving the operator's energy.

MERGENTHALER LINOTYPE CO., BROOKLYN, N.Y.

SAN FRANCISCO · CHICAGO · NEW ORLEANS · CANADIAN LINOTYPE, LIMITED, TORONTO, CANADA · Representatives in the Principal Cities of the World

Linotype Metrolite No. 2

CONSTRUCTIVE-EDUCATIONAL

Milwaukee, Wis, May 16, 1932.

Printing Equipment Engineer,
Cleveland, Ohio.
Gentlemen:

We have been receiving PRINTING EQUIPMENT ENGINEER for some time and find the articles constructive and educational.

I hope you will continue along the same line in the future as you have in the past so that I can continue to pass this magazine on to the several department heads who enjoy reading the articles.

Wishing you continued success, I remain

Very truly yours,
The Olsen Publishing Co.,
P. H. LAABS, *Manager*,
Printing Division.

ROUTED TO DEPARTMENTS

Boston, Mass., June 14, 1932.

Printing Equipment Engineer,
Cleveland, Ohio.

Gentlemen: We like PRINTING EQUIPMENT ENGINEER and find it profitable.

It is routed to all our production departments.

Very truly yours,
AMOS WESTON,
Superintendent of Production,
Christian Science Publishing Society.

MR. FENNONE IS GRATEFUL

San Francisco, Calif., May 26, 1932.

Printing Equipment Engineer,
Cleveland, Ohio.

Gentlemen: May I express my appreciation for PRINTING EQUIPMENT ENGINEER? To me it represents full and useful information for which I am very grateful.

Very truly,
WM. FENNONE, *Pressroom Foreman*,
"La Voce del Popolo."

THANKS, MR. BLEUER

Davenport, Iowa, May 30, 1932.

Printing Equipment Engineer,
Cleveland, Ohio.

Gentlemen: Your magazine is absolutely the best that comes to my desk. I am always certain to find the latest developments in the printing industry in PRINTING EQUIPMENT ENGINEER. Please accept my congratulations.

Yours very truly,
CHARLES H. BLEUER,
Foreman Composing Room,
Davenport "Democrat."

such plies is cut and kerfed for printing there will remain an uncut layer having substantially the proportions characteristics, coefficients of expansion and absorption of the other plies.

1,861,823. PRINTING PRESS AND WEB RENEWING MECHANISM THEREFOR. ERNEST JAMES SMITH, London, England, assignor to The Goss Printing Press Company, Chicago, Ill., a Corporation of Illinois. Filed Dec. 15, 1925, Serial No. 75,513, and in Great Britain July 23, 1925. 32 Claims. (Cl. 242—58.)

5. A printing press including in combination means for supplying a running web to the press, means for moving the lead end of a fresh web supply roll into contact with the running web to unite the webs, and means automatically actuated by the movement of the web-moving means to rotate the fresh web roll.

1,861,824. PRINTING PRESS. ERNEST JAMES SMITH, London, England, assignor to The Goss Printing Press Company, Chicago, Ill., a Corporation of Illinois. Filed Mar. 10, 1926, Serial No. 93,569, and in Great Britain Nov. 4, 1925. Renewed Jan. 19, 1932. 23 Claims. (Cl. 242—58.)

19. In combination in a printing press, means for rotatably supporting a web supply roll which is being unwound by the running press, means for varying the speed of rotation of the web roll including means engaging the periphery of the web supply roll, a driving device and an electro-magnetic control therefor and a resistance settable by an attendant in circuit with an electro-magnetic control.

1,861,825. PRINTING PRESS. ERNEST JAMES SMITH, London England, assignor to The Goss Printing Press Company, a Corporation of Illinois. Original application filed Mar. 10, 1926, Serial No. 93,569. Divided and this application filed Mar. 1, 1929. Serial No. 343,643. 12 Claims. (Cl. 242—75.)

2. printing press including in combination means for supporting a web roll, means frictionally engaging the web roll, differential gearing connecting the web roll-engaging means with a source of power, a brake operating on the differential gearing; and means controlled by the web in passing from the roll to the press for controlling the brake whereby the gearing causes the web roll-engaging means to drive or retard the rotation of the web roll.

1,862,744. INKING MECHANISM. HARLAND FANKBONER, Chicago, Ill, assignor to The Goss Printing Press Company, a Corporation of Illinois. Filed Aug. 31, 1929. Serial No. 389,702. 13 Claims. (Cl. 101—365.)

1. An ink fountain including in combination a fountain roller, a fountain blade cooperating therewith, a plurality of springs uniformly spaced along the length of the blade forcing the blade away from the roller and screws for opposing the action of the springs.

1,862,785. INKING MECHANISM FOR PRINTING MACHINES. CHARLES HENRY CRABTREE, Leeds, England. Filed Aug. 7, 1930, Serial No. 473,591, and in Great Britain Aug. 20, 1929. 7 Claims. (Cl. 101—366.)

1. Inking mechanism for printing machines, comprising an inking cylinder, means for rotating said inking cylinder, and means to deliver ink to the inking cylinder consisting of a plurality of delivery orifices disposed in sets distributed around the periphery of the inking cylinder, the orifices in which sets alternate in staggered relation, an ink reservoir and pumps for supplying ink to the delivery orifices, the inking cylinder being rotated slowly so that the separate bands of ink applied thereto from the respective delivery orifices form a continuous film of ink on the surface of the cylinder.

1,803,002. PROCESS FOR GRINDING ETCHING PLATES MADE OF MAGNESIUM ALLOYS FOR PLANOGRAPHIC PRINTING. ADOLF BECK and WALTER SCHMIDT, Bitterfeld, and HUGO DIBELKA, Dusseldorf,-Oberkassel, Germany, assignors to I. G. Farbenindustrie Aktiengesellschaft, Frankfort-on-the-Main, Germany, a Corporation of Germany. Filed July 20, 1929, Serial No. 379,870, and in German July 25, 1928. 5 Claims. (Cl. 41—41.5.)

1. The process which comprises grinding etching plates made of magnesium alloys for planographic printing with a grinding medium in the presence of a dilute aqueous solution of a bichromate.

1,863,465. AUTOMATIC JOGGER. RUSSELL W. BORROWDALE, Chicago, Ill., assignor by mesne assignments, to The Jogger Manufacturing Company, a Corporation of Illinois. Filed Feb. 7, 1928. Serial No. 252,662. 5 Claims. (Cl. 271—88.)

1. The combination with a sheet stacking apparatus having a stack-supporting table and jogging means for successively aligning the edges of sheets being stacked, of a table lowering mechanism comprising a rotatable shaft operatively connected to and for vertically moving the table, manual means for directly engaging the shaft, a second rotatable shaft geared to the first mentioned shaft, means for automatically disengaging the first and second shafts upon rotation of the manual means in one direction, a pivotally mounted actuating arm, a pawl mounted thereupon, a ratchet wheel fixedly mounted on the second shaft, a shroud adjustable on the ratchet wheel to predetermine the number of teeth thereof which are engageable by the pawl, and a reciprocating arm for direct connection with the actuating arm and the jogging means.

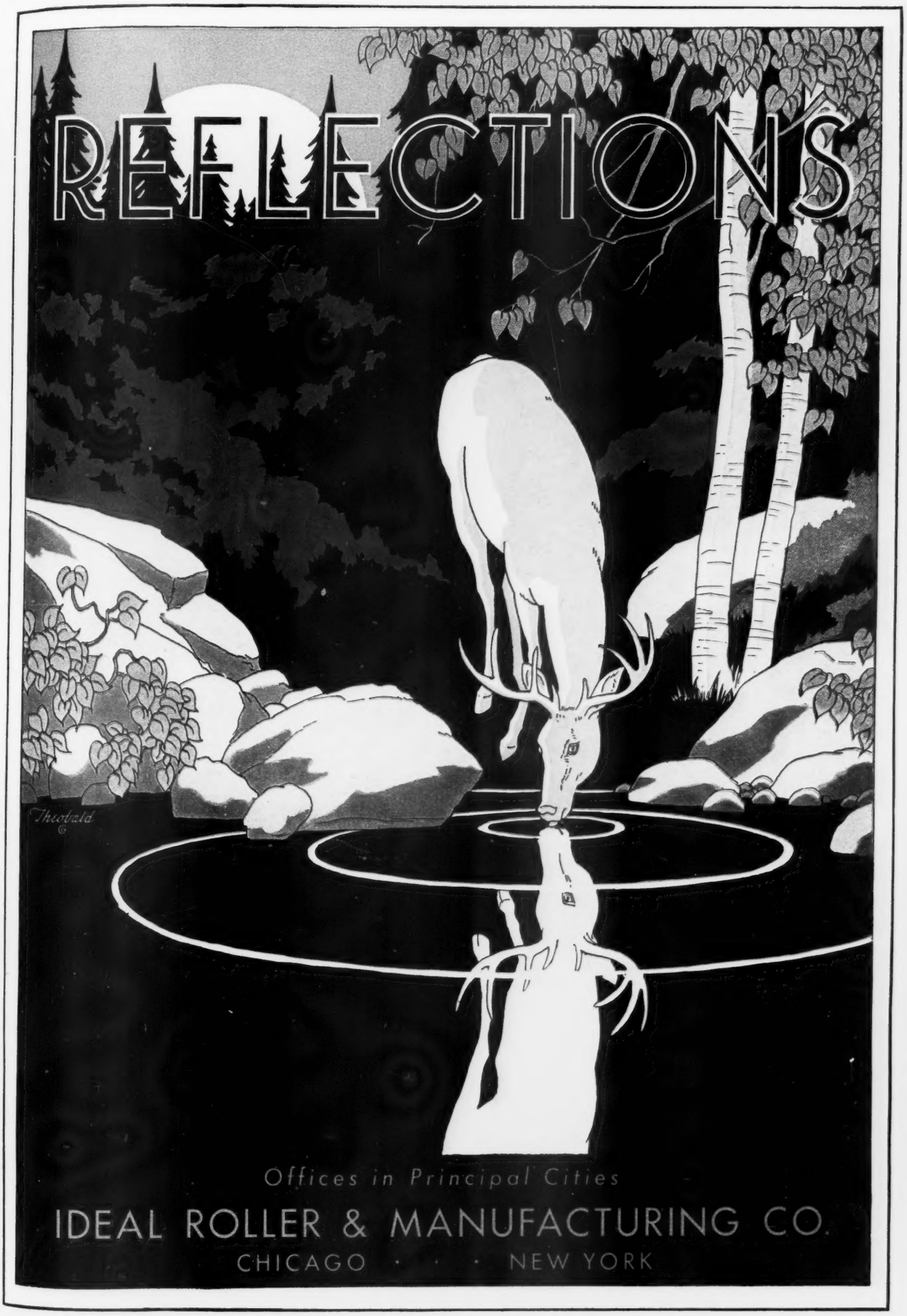
1,863,480. MOLD FOR CASTING STEREOTYPE PRINTING PLATES. WILLIAM F. HUCK, New York, N. Y., assignor to R. Hoe & Co., Inc., New York, N. Y., a Corporation of New York. Filed Nov. 18, 1929. Serial No. 407,952. 8 Claims. (Cl. 22—5.)

1. In a device for casting stereotype printing plates, a mold having a bottom member, a cover member hinged thereto, a locking mechanism to lock the cover and bottom together, means to swing the mold to a vertical position and to a horizontal position and a mechanism arranged to prevent moving the mold from the horizontal position except when it is closed.

Umbra for Striking Result

Umbra, the first modern "three-dimension" typeface to be offered on the American market, is announced by the Ludlow Typograph Company. It is suited, of course, for limited use only, but it makes a single line in an advertisement or composition stand out in a very striking way. Cap fonts of matrices in the 72-point size are now available, and the 48-point here shown is in process of manufacture.

UMBRA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ECONOMY IN PRODUCTION COSTS
THE BASIS OF PRINTING PROFIT

REFLECTIONS

CONSIDER carefully the purchase of your plant equipment. Are you buying fine tools with which to do fine work—or just a hatchet and a saw? Are you interested in the continuous and economical operation of your presses—or just rollers?

Have you really made a thorough study of your roller problems? Have you ever consulted those who know and are glad to give you the benefit of their knowledge, gathered through years of manufacturing experience, through their research laboratories, as well as in thousands of plants throughout the world?

Reflect, printer! It does not in the least obligate you to talk with an Ideal Roller engineer, and he can undoubtedly help you. His interest extends further than merely selling you rollers; he represents an organization which has produced the greatest developments in the roller industry. He knows rollers, all kinds of rollers, and has unlimited additional information at his command. His services are yours on request.

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See reverse side

Redesigned Pot for Monotypes

By R. L. Davis*

In this article we are only interested in the type caster of the monotype machine. Good type depends upon three very important items: (1) the casting metal; (2) the proper setting of the machine; (3) the temperature of the metal.

The casting metal should be clean, free from excessive drossing, and possess certain definite metal percentages.

The setting of the casting machine, which is a very complicated process, is of the uttermost importance in obtaining type of correct size and perfection. The speed of the machine has a great deal to do with the perfection of the type.

Of the three items enumerated, the temperature of the metal is probably most important in the casting of perfect type. The correct temperature to be carried in the metal pot depends upon the nature of the work being done and should be regulated within a narrow differential in order to obtain the best results. The proper regulation of metal temperatures can be no more accurate than the temperature control and burner equipment allow it to be. It is in this direction that the printer of today is casting about for improvements.

Due to modern methods, a greater demand is placed on monotype metal pots at present than ever before.

With regard to this particular application, in order to accomplish the desired objective, it was necessary to supply more heat to the metal and to automatically hold a uniform temperature of the metal. To supply more heat to the metal either the burner capacity or the efficiency of utilization of the present input had to be increased. After a careful study of the design of equipment, application of the gas, and knowledge of the development that has been made in gas utilization we were convinced that a greater B.t.u. could be applied to the metal without increasing the capacity of the burner.

It was found that due to restricted passages for the flue products in the pot as designed at present an abnormal back pressure was created which not only prevented a maximum transfer of heat through the heating surface but also affected primary and secondary air entrainment to the burners. This condition was overcome by drilling holes in the flange on the inside casing which supports the metal pot proper. This allowed a better heat distribution and increased the flue passage area. The flue passage area was now sufficient to take care of the volume of combustion products from the gas burner. Figs. 1 and 2 are detailed sketches showing this pot before and after alterations were made.

The insulating material used on monotype pots after a period of time was found to become disintegrated, thereby losing its insulating properties. The existence of this condition may have been due to the present tendency to carry higher metal temperatures in type casting. This insulating material was replaced with a combination of half Sil-O-cel and half asbestos fibre on the redesigned pot.

In place of the old Bunsen type burners, with a wire gauze at the top which was in general use on monotype pots, an atmospheric ring burner with a venturi inspirator was selected, as this type was efficient and lent itself to automatic temperature control. The burner was installed so that its top was approximately 2½ in. from the bottom of the pot and no flame impingement could take place.

There is no other industry in greater need of temperature control, both from the point of view of economy and a better finished product, than is type casting. In this particular installation a low-pressure Partlow control, which throttles the gas in proportion to the new metal being introduced into the pot, was used.

(Continued on page 25)

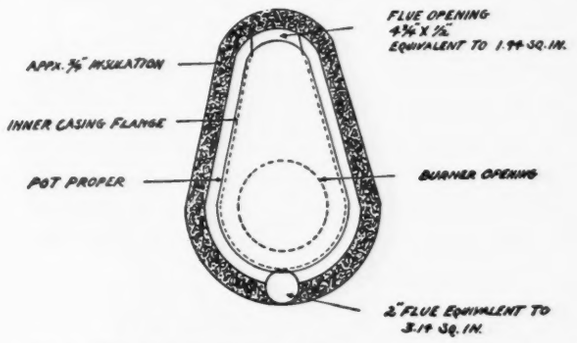


Fig. 1. Plan view of monotype pot before being redesigned.

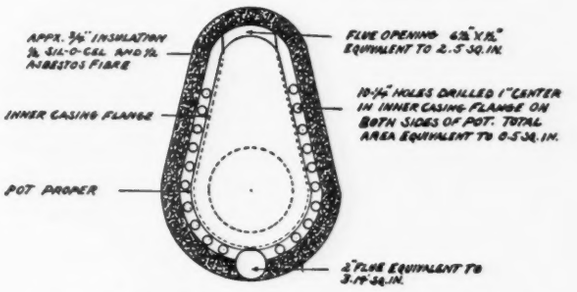

APPX. ¾" INSULATION
½ SIL-O-CEL AND ½
ASBESTOS FIBRE
FLUE OPENING 4¾" X ½"
EQUIVALENT TO 2.5 SQ. IN.
10-¼" HOLES DRILLED 1" CENTER
IN INNER CASING FLANGE ON
BOTH SIDES OF POT. TOTAL
AREA EQUIVALENT TO 0.5 SQ. IN.
INNER CASING FLANGE
POT PROPER
2" FLUE EQUIVALENT TO
3.14 SQ. IN.

Fig. 2. Plan view of monotype pot after being redesigned.

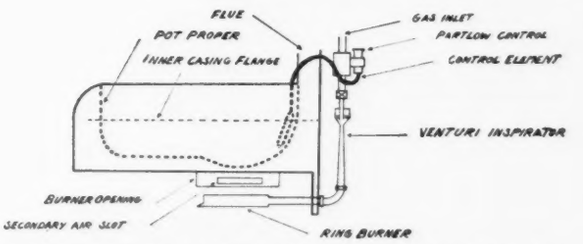


Fig. 3. Monotype pot showing burner equipment and control.

*Consolidated Gas, Electric Light and Power Co. of Baltimore.

See reverse side

What Type Ink for Rubber Printing Plates?

By C. A. Russ*

THE future of the rubber plate as a printing medium is at this stage of its development as much a problem for the ink chemist as for the rubber engineer. Rubber as a printing plate medium, both cut and molded, has proven itself for certain types of printing, and is considered "standard" as a material. Many printing experts believe that rubber has already made a place for itself as an important printing material, and sufficient evidence has been developed to justify this belief.

The principal difficulty encountered up to this point in the actual use of rubber printing plates has been in the choice of inks for use with rubber plates. It is known that the oil, acid and metallic ingredients in various inks interfere with proper performance, and it is in overcoming such difficulties as these that the ink chemist may assist the rubber engineer in making available to the graphic arts a printing medium which possesses very apparent advantages. A specific knowledge of ink and plate requirements is imperative. Many excellent ideas have proven failures due to lack of the basic knowledge which in this case must be the joint product of the cooperative work of the ink and rubber expert.

The outstanding advantages of the rubber plate, namely, resiliency, better printing surface and probable lower cost, would seem to merit the most serious consideration of paper, ink and rubber manufacturers and the printing fraternity. At the present time, the two points which have not been determined are the choice of the proper ink to eliminate a tacky condition of the rubber and the ultimate life of rubber plates. Rubber engineers have accomplished much towards incorporating the necessary characteristics in this material and further refinements can be anticipated. In the final analysis, the eventual scope of rubber printing plates lies with the ink engineer in that present conventional ink types apparently must be modified if the advantages of rubber are to be fully capitalized. After weighing the preliminary evidence ink makers must decide whether commercial expediency justifies the necessary research. A few concerns have already accomplished some measure of success. Assuming that the need for new ideas and materials is an important factor, especially during present business conditions, it is reasonable to believe that the progressive ink manufacturer should be interested in rubber plates. The objective of giving the printer a more efficient and less costly printing material and procedure seems to be a joint responsibility involving the ink and the rubber engineer. On this basis, it may eventuate that rubber plates will be limited for use to produce only certain types of work. Also, it is conceivable that research may develop types of inks which are basically different in character from those used at the present time. Some work has already been done in the development of aniline inks, which in certain instances have proven adaptable to rubber plates with no appreciable deteriorating effect.

The term "Oil-Proof Rubber Plates" obviously indicates the necessary characteristic of oil resistance. It is true that to be successful a rubber plate material must, above all, resist to a practical degree, the swelling and deteriorating effect of oil. Those oils of low volatile characteristic, having a substantial amount of tails or residue, are more destructive to rubber than the so-called lighter oils. It is generally known that kerosene, turpentine, lubricating oils and oils of like nature will affect rubber quicker and to a greater degree than will the volatile oils, such as naphtha and benzine. In view of this, would it be possible to alter ink vehicles to more nearly comply with rubber requirements? Low volatile mineral oils are considered more injurious than boiled linseed oil. On the other hand, hard varnishes which we understand are nothing more or less than linseed oil subjected to long and high temperatures, are inimical to rubber plate material in that they become attached to the rubber surface and create a "tacky" condition. It is impossible to keep the surface of rubber plates in a printable condition if inks having a substantial amount of hard varnish are used. It has been found from experience that cleaning operations, in such instances, are impractical, whereas plates in contact with soft type inks having a minimum amount of hard varnish can be properly cleaned and maintained in a suitable condition for printing by the use of a cleaning solution approved by a qualified rubber engineer.

Three Rules Affecting Volts Drop

(As Engineers Express Them)

1. The current in any circuit varies directly with the potential and inversely with the resistance. (Ohm's law.)
2. Volts drop in any circuit is equal to the product of the current in amperes and the resistance in ohms.
3. Resistance varies directly with the length of a conductor and inversely with its cross-sectional area.

(As They're Expressed in Everyday Language)

1. The greater the voltage or electrical "push," the greater is the current; the greater the resistance, the less is the current.
2. To find out how many volts you lose in a circuit or a section of it, multiply the amperes by the resistance in ohms.
3. The longer a wire is, the more resistance there is in it, but the thicker the wire the less is the resistance.

This suggests the thought that possibly other elements can be used in inks to replace hard varnishes which will not unduly affect the rubber and at the same time result in a quick drying and high lustre finish. A somewhat parallel case is noted in respect to the inks that are practical in contact with rubber rollers. Over a period of time, the newspaper type of ink has proven to be generally adaptable to rubber rollers whereas conventional job inks, so called, of substantial hard varnish content, will speedily result in a tacky condition on the surface of the rollers, to the point where they are impractical. The accumulation of a varnished surface on rubber plate material obviously results in a printing medium that has not the original characteristics of rubber.

Mineral dryers, commonly used in inks such as manganese, lead and cobalt, have, unfortunately, a deteriorating effect on rubber. Manganese, which we understand is commonly used, is especially effective. Such paste dryers as manganese and lead oleates are especially undesirable. It has been stated that the present type of dryers cannot be replaced. This is a matter on which we are not in a position to pass an opinion. We

*United States Rubber Company, in *American Ink Maker*.

It will PAY You to OPEN this DOOR

IF YOU **buy motor and control equipment with the same care with which you buy presses, it will pay you to open this door. Your need is its key—and at your service are specialists, with whom it is a pleasure to deal.** • **You can depend on what they tell you; their advice is based on thorough knowledge of pressroom requirements.** • **This is the "open door" to proved engineering service. Open it to profit.**

200-560

GENERAL ELECTRIC

That's Why We Have Trouble With Our Type Metal

"SEE THOSE FELLOWS IN THERE? They are all waiting to put in their bid for our new metal supply. Just as long as we have those fellows in there waiting to sell their metal on a bid basis at so much per pound, regardless of quality, you and I are going to have trouble with our metal. That is the reason why we have such high metal costs.

"If the front office would follow my idea of buying highest Quality Imperial Type Metal serviced by the Plus Plan, forgetting this bid business, we would have better looking work, less machine and metal trouble, and at the end of the year we would show lower metal costs than we do now. That is why I believe it best to —

change to

Imperial

METAL

THE IMPERIAL TYPE METAL CO.
Philadelphia · New York · Chicago · Los Angeles

merely wish to emphasize the desirability of giving the matter serious consideration.

The presence of acids in inks is undesirable in view of the fact that it is impossible for the rubber engineer to fabricate rubber compounds that will simultaneously be both acid- and oil-proof. The technique involved in the manufacture of oil-proof rubber is substantially different from that of acid-proof rubber. Apparently the use of oil in inks cannot be eliminated and must be considered a necessary evil from the standpoint of the rubber engineer. If such is the case, acid should be eliminated or reduced to the lowest minimum. Experience over a period of time indicates that certain coloring elements in inks have a more active effect on rubber than others. To illustrate, qualified experts have stated that certain colored inks will reduce the life of offset blankets, as used in lithography, as much as fifty per cent. If this fact is not known to printers and ink manufacturers, it is probable that unjustified complaints of mysterious origin may not be properly analyzed. Special inks in which are incorporated copper or its alloys, for example, would be highly destructive to rubber plates, as copper and ink are anything but friendly.

Qualified rubber manufacturers can today produce a closely controlled rubber printing plate material, both in respect to uniformity of product and thickness tolerances. The close limits to which it is necessary to manufacture this material can be neutralized by operating conditions which possibly may be corrected. Obviously, educational effort during the introductory period, by all those interested, will be most beneficial.

Intertype Appoints New Manager

Intertype Corporation announces the appointment of M. J. Durand as Manager of its Pacific Coast Division, with headquarters at 152 Fremont Street, San Francisco.

Mr. Durand succeeds William B. Goode, who voluntarily retired from the responsibilities to seek a well-earned rest.

Mr. Durand, the new manager, has been associated with

M. J. Durand, New Manager of Intertype's Pacific Coast Division.

Mr. Goode for the past thirteen years. During that time he has been in close contact with the requirements of the trade.

The Pacific Coast office of Intertype Corporation embraces the States of Arizona, California, Idaho, Montana, Nevada, Oregon, Utah and Washington. It also includes the territories of Alaska and the Hawaiian Islands.

The Los Angeles sales office, covering a prosperous section of the Western territory, continues under the efficient management of Elmer H. Hostetler, who has been in charge of Intertype activities in that section of the country for ten years.

Remelting Type Metals

MECHANICAL executives who overlook the matter are in a position to save their employers considerable money through making arrangements for the proper remelting and pigging of type metals. In the course of a year much money may be dissipated in the metal account through careless remelting methods.

After new type metal is put into use its working qualities in the casting unit (so far as its mechanical condition is concerned) will be dependent upon the treatment given it in the remelting room.

In the care of type metals the rules are few and simple. The main point to consider is the trustworthiness and dependability of the man who is doing the work. An occasional checkup should be made to see that the instructions are being rigidly observed.

At the outset, it is an important matter to equip the remelting department with a furnace of ample size so as to melt the metal in as great a quantity at one operation rather than several smaller remeltings. The furnace should be located in a well-lighted and ventilated space so that the remelting operation can be performed efficiently and pleasantly. The furnace, if possible, should be heated with any fuel except coal; equipped with a hood to carry off fumes, a bottom-pour valve, an agitator (for capacities of a half ton or more) and a thermostat. Any ordinary thermometer or a portable pyrometer will serve the purpose of heat determination in the absence of a thermostat. Do not attempt to remelt type metal without some form of heat measuring device which may be obtained at reasonable prices through your type metal firm.

If using dissimilar metals (different formulae), such as linotype, monotype, stereotype or foundry type, separate carefully before dumping into remelting furnace to avoid ruining a remelt. By allowing, for example, monotype metal to become mixed with line-casting machine metal, the resultant mixture would be too hard for line-casting machine usage in that the metal pot mouthpiece would tend to clog, causing "stuck" slugs, chilling of face and back squirts. The same mixed metal would work well enough in a monotype machine, but would be too soft to cast type of equal quality to type cast from regular monotype metal.

Extreme care should be exercised to see that electrotypes, zinc, brass rule or leads, copper halftones and advertisers' stereotypes are segregated from the type or line-slug metal supply. Provide receptacles for these various contaminating agents and sell them for junk. All of these metals will affect the working qualities of type metal and may cause serious mechanical troubles.

As soon as the furnace charge becomes liquid, remove from the surface any of the above-mentioned foreign metals, as even a trace of zinc, for example, impairs the type-casting properties of the alloy.

To prevent using too much fuel during the operation and avoid excessive drossing (waste), the following temperatures should be maintained when remelting:

Line-casting machine metal	600-650 F.
Standard Monotype metal	675-725 F.
Special Monotype metal	700-750 F.

As soon as the proper temperature is reached, stir the metal from the bottom upwardly for ten minutes and then treat the dross before skimming with a compound to remove all shotted metal. The right compound will convert the dross into a fine dry powder, which should be removed with a perforated skimmer. The molten mass should then be pigged immediately without the attendant being interrupted during the operation.

As the dross removed represents some of the richness taken out of the metal, it also follows that every pound of this dross represents a considerable loss in metal. Logically, then, a rigid system should be followed of replacing the lost ingredients by exchanging regularly each dross accumulation for an equal quantity of metal of suitable analysis which will restore the elements lost in the remelting operation. In doing this you will also be replacing pound for pound that amount of metal taken from your supply.

CUTS CAN BE MOUNTED SUCCESSFULLY TO BASES WITH

Cut Mounting Tissue

- Many plants are now using Cut Mounting Tissue to attach cuts to both stereotype metal and wood bases, particularly small cuts. Cut Mounting Tissue holds the cut securely in place during moulding and for runs as high as 5000 on flat-bed presses. Cut Mounting Tissue can also be used to splice paper.

The process is simple and rapid. The Tissue is cut a little smaller than the cut and placed on the base, the heated cut is placed over the Tissue and pressed firmly over the base. It sets immediately on cooling and is then ready for use.

We are prepared to supply Diamond B Cut Mounting Tissue in various sizes and weights.

Write today for complete information.

BEMIS ASSOCIATES, INC.

294 Pleasant Street WATERTOWN, MASS.

A New Economy

After years of research a new type metal has been perfected that is much harder than foundry metal.

Type manufactured from this amazing new metal, in daily use for over two years shows no wear. We can truthfully say that type cast from this new, hard alloy is practically **EVERLASTING.**

We are ready to fill orders in all the popular type faces in **FABERKROME TYPE** at the following prices:

6 point to 12 point . . . 75c per pound
14 point to 72 point . . . 65c per pound

TYPE CAST FROM STANDARD MONOTYPE METAL:
6 point to 36 point . . . 50c per pound

Trade Press Typographers

GEORGE A. FABER, *Manager*

407 East Michigan Street
Milwaukee, Wisconsin

Redesigned Monotype Pot

(Continued from page 19)

This automatic control was set for a given temperature and the metal was maintained constant within a temperature differential of eight degrees, with cold metal being added as required. Fig. 3 shows a sketch of the burner and control installation.

The results obtained by the remodeling of a monotype pot and its burner equipment were as follows: No shutdowns were necessary awaiting for metal temperatures to be brought up and less gas was consumed per operating hour. With the old burner system it required approximately one hour to bring the temperature of a 50-lb. pot up to 650 deg. F. while consuming 30 cu. ft. of gas. With the remodeled pot, only 30 min. are required to bring the 50-lb. pot up to 650 deg. F. and the gas consumed amounts to approximately 15 cu. ft. Nine cu. ft. of gas were required for holding on the rebuilt pot and one additional cu. ft. of gas was required for every 10 lbs. of metal introduced and taken out of the pot.

Fig. 4. Photograph showing control and inspirator on two casters designed for large type.

Latest Printing Mechanisms

(Continued from page 15)

sure or changes due to varying thickness of stock affect the tripping of the cylinder in any way.

The Hoe feed and register mechanism requires no attention after adjustments have been made for thickness and size of stock.

The manufacturers claim that both press and feeder, when properly operated, will produce high-quality printing to commercially accurate register at a speed of 4,000 impressions per hour on paper stocks heavier than 39-lb. label paper and up to 15-point cardboard, that have been mill-trimmed and properly conditioned for feeding and printing, and will also handle other stocks (lighter or heavier) at proportionately slower speeds.

All vital running parts of the press are equipped with anti-friction radial or thrust bearings which require lubrication only after periods of four to six months of continuous service.

RECOGNITION

●

This division of the Burgess Industries was founded just about four years ago. Today we manufacture a product superior in every way to any on the market.

The practical cooperation of the mechanical department personnel of our many customers, coupled with our staff of research engineers, enabled us to develop the Burgess Chrome Mat to such a point of perfection that *it is now regarded as the standard of comparison.*

Recognition of the quality is shown by the fact that more newspaper plants in the United States are using Burgess Chrome Mats than any other make.

The Hartford Courant, winner of the Ayer Award for 1932, feels that the Burgess Chrome Mat played an important part in this achievement.

Why hesitate longer. Improve your printing now with the adoption and use of Burgess Chrome Mats.

●

BURGESS CELLULOSE COMPANY
Freeport, Illinois

Composing Room Executives--We have two practical composing room machines which were used as demonstrators for a short time which we offer at substantial savings. Both machines guaranteed new.

Amsco Power Mitering Machine--Miters rule and strip materials up to 18-point. Has 72-pica gauge adjustable to points. New price, $180.00. Will sell complete with motor, f. o. b. St. Paul - - - - - **$135.00**

Mohr Portable Saw--Portable Bench Power Saw for quick, clean cutting of slugs, rule and makeup material. Especially adapted for sawing Ludlow slugs. A real labor-saver in any busy composing room. New price, $177.00. Will sell complete with motor - - - - - **$125.00**

Descriptive folder will be sent fully describing above machines.
Will ship to responsible concern subject to approval.

PERFECTION TYPE, INC.
PRINTERS' SUPPLIES
141 East 5th Steet St. Paul, Minnesota

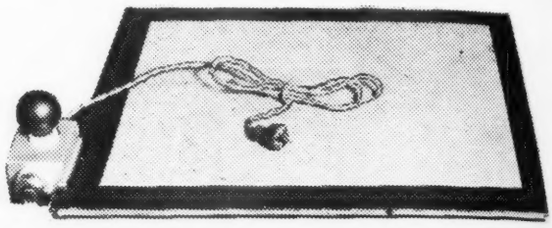
The new Hoe 41x54 in. Single-Color Sheet-Fed Rotary Press is manufactured by R. Hoe & Co., Inc., 138th Street and East River, New York, N. Y., and can be furnished in several sheet sizes, also in single, two-color and multi-color styles.

The Acme Cork Blanket Conditioner

The Acme Cork Blanket Conditioner contains an electric heating unit scientifically designed to create the exact amount of heat necessary for conditioning the cork blanket.

The regulated heat transmitted to the cork gives it the required flexibility and at the same time transmits enough heat to the dry mat under pressure of molding, to make it also flexible enough to withstand a greater depth without fractures.

Some of the most important features when using this Cork Blanket Conditioner are, that 30% to 40% less pressure is needed when molding and only the cork blanket itself is required. Crushing of type and bending of rules is entirely eliminated. It doubles the life of the cork blanket and gives smoother blacks and clearer halftones. It reduces buckles to



a minimum, due to the direct pressure effect and less stretching of the dry mat.

The red signal light is merely a current indicator. Should the light burn out, the conditioner is so wired that current will continue to permit continuous operation. The unit is made to operate on either A. C. or D. C. current at 110 volts. Can be plugged in on any light line.

Albert D. Hildwein, of the Cincinnati *Times-Star*, the inventor of the conditioner, states that exhaustive tests have been made over a three-year period to provide a device which will give the exact amount of heat necessary to improve the molding qualities of all makes of dry mats and claims its use conquers dry mat moulding troubles.

It is now being successfully used by some of the largest publications in the country.

Further information may be secured from The Acme Electric Heater Co., 3264 Observatory Road, Cincinnati, Ohio.

SATISFIED WITH CERTIFIED

CERTIFIED DRY MATS

Measuring Certified Value

The printed page is the best proof of every Certified mat, as well as the yardstick by which its relative value should be measured.

However, the easy molding qualities, the quick scorching and facile casting of Certifieds are all factors which make them the best value in dry mats.

There's a Certified mat to meet your purse and purpose. You can verify this by actual trial in your own plant.

To make it as easy as possible we will gladly furnish you with samples free of charge and without obligating you in any way.

Why not get acquainted now?

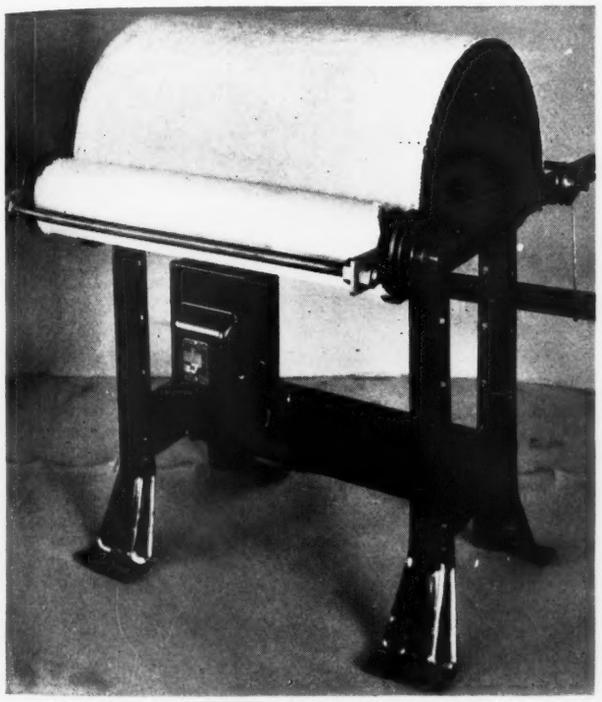
CERTIFIED DRY MAT CORPORATION
338 MADISON AVENUE ▾ ▾ ▾ ▾ NEW YORK, N. Y.
For dependable stereotyping---use Certified Dry Mats
Made in U. S. A.

Turtle-Back Scorching Machine

The American Publishers' Supply, P. O. Box 131, West Lynn, Mass., make announcement of a new Turtle-Back Scorching Machine.

A roller curtain cover fits snugly over the drying form and the manufacturers claim it is guaranteed to produce perfect matrices. This curtain is balanced so that it may be operated by the slightest touch. It exerts a 45-lb. pressure on the matrix drum. Different pressures may be obtained by adding or subtracting counter weights on the back of the cover balance. The wire-woven asbestos curtain is designed to wear a long time. New curtains, however, may be purchased at very small cost.

The drum is held over the arch by two steel straps which may be quickly and easily removed to gain access to the heater units. The machine is fitted with General Electric



heater units equipped with low, medium and flash heat. The flash heat is a new feature which allows the temperature to be brought up to scorching heat in a very short time.

The machine is built in two distinct types.

The Regular Model has a line switch fused with two independent safety switches for controlling the heat.

The Metropolitan Model is wired for thermostat control and may be set at any temperature desired and hold the heat evenly, giving a uniform temperature throughout the entire edition. The drying periods may be adjusted by the amount of heat used. These machines are constructed for double page work also and may be had with or without thermostat heat control.

Zenke Universal Gauge

The Zenke Universal Gauge, which has been devised by Henry C. Zenke, mechanical superintendent of the New York *Staats-Herold* Corporation, and was exhibited for the first time at the Cincinnati conference of the A. N. P. A. Mechanical Department in June. The gauge will measure correctly within 0.0005 in. any and all parts of curved or flat plates.

It eliminates the necessity of sawing plates into parts, to measure the thickness with a micrometer, results of which

Stereotypers Asked For It . . .

AMERICAN PUBLISHERS SUPPLY BUILT IT!

Announcing the NEW

TURTLE-BACK FORM-O-SCORCH

AS NEW AS THIS MORNING'S NEWSPAPER!

GUARANTEES PERFECT MATRICES

Stereotypers have long demanded an efficient, low-priced scorcher. This year, more than ever, they have insisted on low price. The New Turtle-Back Form-O-Scorch meets both of these demands with the additional quality of durability.

[See illustration this page]

AMERICAN PUBLISHERS SUPPLY
P. O. BOX 131 WEST LYNN, MASS.

If You Will Refer Your Mat Problems to "Wood Service"—

YOU will have the advantage of a combination that will get the answer for you.

First, there is the Wood service man who, before entering "the field," served as a stereotyper in newspaper plants. He has learned the "ins" and "outs" through constant handling of mats and casts.

Second, there is our experimental laboratory at the mill and our research department where we are continually studying and testing to improve our product.

Third, there is our firm of consulting chemical engineers to whom we refer for a check-up on chemical analyses, new formulae, etc.

Wood Service is open to you, regardless of the kind of mats now used in your plant. There is no obligation involved when you call us.

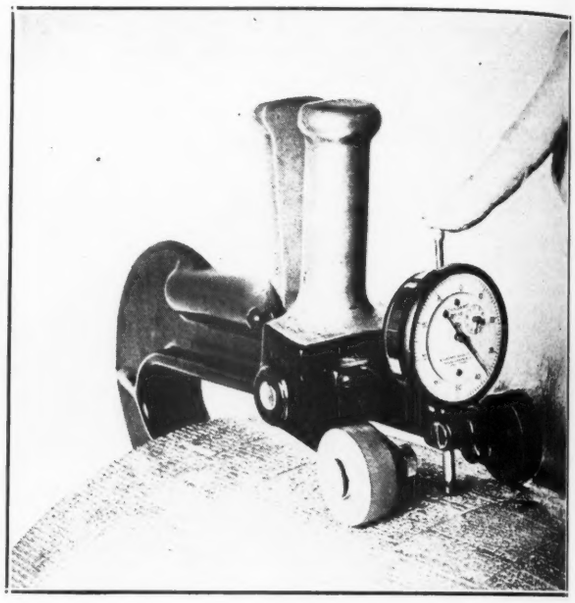
WOOD

FLONG CORPORATION
HOOSICK FALLS, N.Y.

WOOD DRY MATS
ALWAYS UNIFORM

usually vary according to the "feel" of the one who makes the test. This gauge is positive. It will measure anything up to 1 in. in thickness and 18 in. wide, such as type high or shell casts, electros, zinc plates curved or flat.

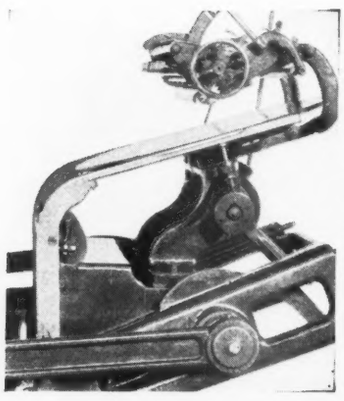
It will also measure blankets any size.



By the simple exchange of a needle for the button used when measuring plates, the etching depth of halftones and zinc etchings may readily be determined.

Further particulars may be obtained by communicating with Henry C. Zenke, 8927 120th Street, Richmond Hill, New York, New York.

New Roller Speed Tracks



New Roller Speed Tracks have recently been announced by Chandler & Price as standard equipment on its regular 14½x 22 Craftsman Press with Automatic Feeder. It is said that these tracks will provide an additional 300 impressions hourly in press speed, giving a range up to 2600 impressions per hour.

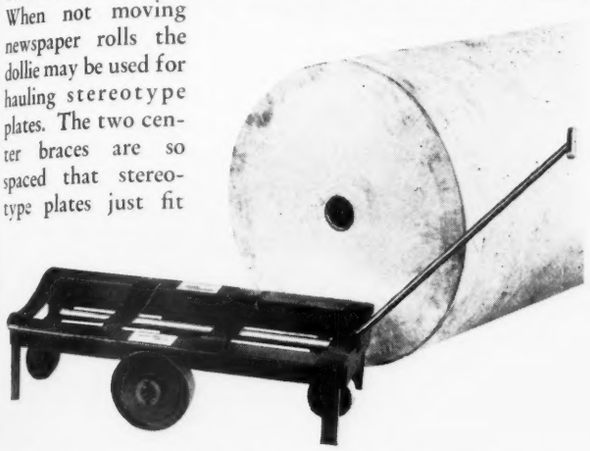
These new tracks are curved to the proper degree to permit rapid, even movement of rollers over disc and form. They also assure finer distribution because their scientifically calculated bow eliminates the possibility of jumping or skidding of the rollers.

Another advantage is the ease in washup and convenient roller storage space. When rollers are stopped on the curve center of the tracks, no contact is made with either disc or form. This permits the pressman to wash both disc and rollers, leaving the rollers in their saddles overnight if desired.

Those desiring complete information on the new Roller Speed Tracks can secure it by writing The Chandler & Price Company, Cleveland, Ohio.

The Monomelt Dollie

The Monomelt Dollie is of electrically welded steel construction and serves a dual purpose in press rooms. With the handle pushed back into the tube, newsprint rolls may be handled easily, conveniently, quickly. The four legs, coming to within ¼ in. of the floor, prevent the dollie from tipping when the print is being rolled off. To meet various floor conditions these legs can be removed or shortened if necessary. When not moving newspaper rolls the dollie may be used for hauling stereotype plates. The two center braces are so spaced that stereotype plates just fit



when laid cross ways, and with the handle in position the load can be removed easily.

Prices and other data or information will be furnished upon request by The Monomelt Co., Sales Office: Suite 2409, 10 E. 40th St., New York City.

Two Late Linotype Typographic Developments

Ten-point Linotype Excelsior with long descenders is the latest cutting in the Linotype Excelsior family.

"Not every typographer and printer realizes the additional charm and quality the use of long descenders brings to a mass of body type," says C. H. Griffith, assistant to the president of the Mergenthaler organization. "Yet this extra half point or point in length, added to the lower case g, j, p, q and y, really makes a decided difference in reading ease. Long descenders are also available for many Linotype book faces."

Referring to the Vertical Gothic Condensed Capitals for catch lines in food store advertising, a Mergenthaler announcement states:

"As as additional aid to economical production in setting grocery store advertisements, three sizes (6, 10 and 12 point)

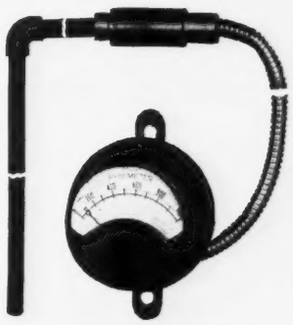
Showing use of 6 Point Gothic Condensed No. 2 Capitals (punched on matrices and cast horizontally on slugs)

of Gothic Condensed No. 2 capitals have been punched horizontally on matrices—each character of the 6 and 10 point centering on a 6 point slug, and each in the 12 point centering on an 8 point slug. These new matrices eliminate tedious fussing with hair spaces in justifying vertical matter. When cast the letters appear horizontally on the slug. In makeup the slug is cut to the desired length and used vertically between the large figures."

Why Burn Your Metal?

Why waste fuel?
Why spoil plates?
Why risk expensive delays?

Use an "Alnor" Pyrometer



Metal temperature is vitally important to every newspaper and printing plant.

$42 COMPLETE

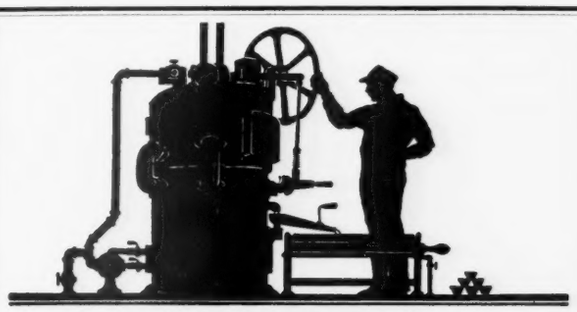
Why guess when you can equip each stereotype, electrotype or remelting furnace with an "Alnor" Pyrometer for as low as $42.00?

The "Alnor" Pyrometer is accurate, rugged and durable. It can be installed by any shop man in a few minutes.

It pays for itself many times over in the saving of metal, time and fuel to say nothing of improving your printing through better plates.

Write for descriptive bulletin and list of users.

Illinois Testing Laboratories, Inc.
139 W. Austin Avenue Chicago, Illinois



THE MONARCH MONOMETER
A
PRINTERS' MELTING FURNACE

WITH
THERMOSTATIC CONTROL
OF TEMPERATURE.
ELECTRICITY, GAS, OR OIL
AS FUEL.
AUTOMATIC MIXING AND
STIRRING OF METAL.
DROSSLESS & FUMELESS.
MADE IN CAPACITIES
FROM 500 - 10,000 LBS.

WRITE FOR COMPLETE CATALOG P.E.E.

The Monarch Engineering & Mfg. Co.
701 - 702 American Bldg., Baltimore, Md., U. S. A.
Works, Curtis Bay, Md.

NOW IS THE TIME »

To Have Us Take Care Of Your

LINOTYPE PARTS REPAIRING

MOLDS

U. A. Linotype and Intertype are completly rebuilt—warping eliminated, size brought up to "type high;" body and cap completely reground. Unconditionally guaranteed to give perfect slugs - - - - - $22.00

Recessed Molds (Linotype) Rebuilt - - - 25.00

Recessed Molds (Intertype) Rebuilt - - - 40.00

We are equipped to take care of any special mold work or alteration required.

First Elevator Jaws Rebuilt (cost dependent on labor expended).

Back Jaws Rebuilt.

Distributor Box Bars Repaired - - - - - - - - $1.75

Second Elevator Bars Repaired, each - - - - - 2.75

Second Elevator Bar Links - - - - - - - - - 3.00

Channel Rails, Back and Front, each - - - - - 3.00

Vice Locking Screws - - - - - - - - - - - 1.50

Assembling Elevators (cost dependent on labor expended).

Side Knives and Back Knives Reground.

Linotype Parts Corporation

NEW YORK
270 Lafayette Street

KANSAS CITY
314 West 10th Street

MONOTYPE PARTS REBUILT

and New Monotype Accessories

Prompt Service—Less Expensive—All Work Guaranteed

Send your name on a post card and we will put you on our mailing list to receive our monthly bulletin on "Free Monotype Equipment Exchange Service"

NEWTON MACHINE CO.

211 High Avenue Cleveland, Ohio

Linotype and Intertype Repair Service

Molds—side knives—back knives—1st elev. back jaws—spacebands—dist. box bars—2nd elev. bars—magazines—motors—dist. screws made like new—driving shafts bushed—general repairing of parts. Also make special Linotype and Intertype tools—Matrix ear file gauge $2.50—magazine expander $4.50—magazine broach $4.50—liner cutting gauge $25.00—fiber motor pinions for all makes of motors and special pinions made to order.

William Reid & Co. 537 S. La Salle St. Chicago · Illinois

There Is No Waste Circulation In Printing Equipment Engineer

Every reader is in a position to recommend, specify, or actually purchase printing equipment and supplies.

Flint Ink Company Occupies New Plant

The Howard Flint Ink Co. has just opened a new factory at Jefferson Davis Parkway & I. C. R. R., New Orleans, La. This factory was designed especially for the manufacture of

printing inks. Its construction and equipment embodies all the latest improvements in machinery and processes known to the ink industry.

The establishment of this factory gives the South its second Flint ink factory, the first being a plant at Houston, Texas. The New Orleans building is constructed of brick and concrete and is 72 ft. by 200 ft. in size.

Ed C. Walton is at the head of the New Orleans factory organization which includes a staff of thoroughly experienced ink makers.

In addition to serving printers and publishers in the Southern states, this factory will handle all export business for the Flint Ink Company.

Latest Catalogs, Books and Bulletins

Readers of PRINTING EQUIPMENT ENGINEER who are interested in securing any of the catalogs, books or bulletins listed below can do so by checking the literature desired. Mark carefully only that literature which you wish to receive. Fill out the coupon and send it to us. The literature will be forwarded without cost except where noted.

The Universal Gauge—Folder describing a gauge which measures accurately plates (either curved or flat) of any size or thickness. May be used also for determining the etching depth of halftones or line cuts.

Linotype Supplies—Illustrated folder listing, illustrating and describing many parts for application to linotype machines, such as molds, liners, spacebands, mouthpieces, jaws, bars, etc.

Accurate Type Gauges—Strip folder listing line gauges, makeup and composing rules, rule sets made up in plush-lined oak cases and leather pocket rule case sets.

Printing Equipment Engineer,
1370 Ontario St., Cleveland, Ohio.

Gentlemen: Please send the literature checked above without obligation.

Name of Company _____

Attention of _____

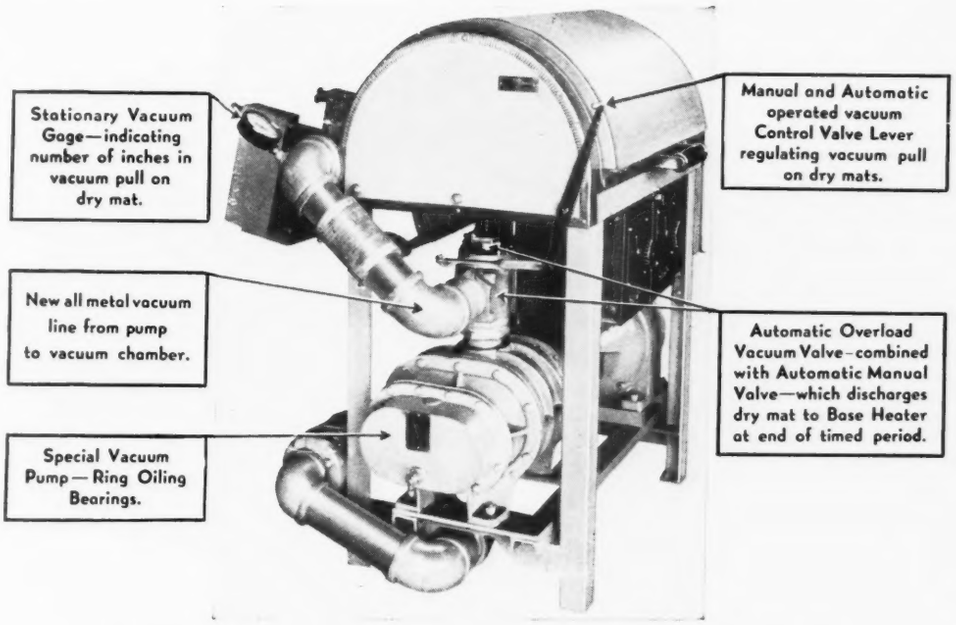
Position _____

Street Address _____

City _____ State _____

WHERE IS THE LOGIC in defending the use of ordinary scorching means, purely because of their low first cost when the ultimate cost per year by their use amounts to twelve or fifteen times their original purchase price; in waste of materials, loss of time in the stereotype room. Expensive and excessive impression costs in the press room, wear and tear on press blankets and machinery and on top of all this you do not obtain Quality Printing Results.

Contrast ordinary scorching means with **STA-HI AUTOFORMERS**, which pay for themselves usually within the first year's operation, by the saving of time and no waste of materials in the stereotype room, and further by the even all over plate contour in the press room. Eliminating expensive, excessive impression and its high costs—besides all these economies, you print **A Better Looking Newspaper.**


Stationary Vacuum Gage—indicating number of inches in vacuum pull on dry mat.
Manual and Automatic operated vacuum Control Valve Lever regulating vacuum pull on dry mats.
New all metal vacuum line from pump to vacuum chamber.
Automatic Overload Vacuum Valve—combined with Automatic Manual Valve—which discharges dry mat to Base Heater at end of timed period.
Special Vacuum Pump—Ring Oiling Bearings.

THE NEW STA-HI AUTOFORMER

An Automatic Standardized Means of Forming and Scorching Dry Mats

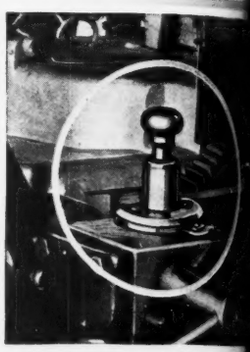
Write our offices for full particulars, or any of our representatives.

STA-HI NEWSPAPER SUPPLY CO. INC., 52 West 34th St., New York; 417 Oregonian Bldg., Portland, Ore.; 1235 Westlake Av., N. Seattle, Wash.; 703 Bendix Bldg., Los Angeles, Calif.

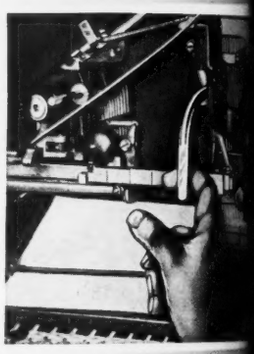
GENERAL AGENTS:—GOSS PRINTING PRESS CO., Chicago; South America, National Paper & Type Co., New York; Canada, the Toronto Type Foundy Co., Ltd., Toronto, Canada; England, France, and Germany, Goss Printing Press Co., Ltd., London, England.

New Inventions That Were Created to Reduce Composing Room Costs

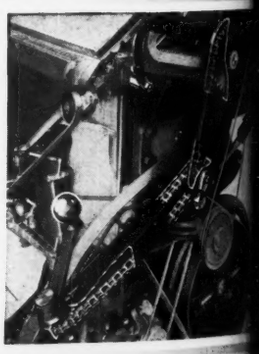
1. **The QUADDING of Lines or the CENTERING of Lines—Either or Both—is Automatic on New Intertypes equipped with the latest special device. Intricate, Double-priced Composition Can Now Be Set Faster and Cheaper than Straight Composition.**



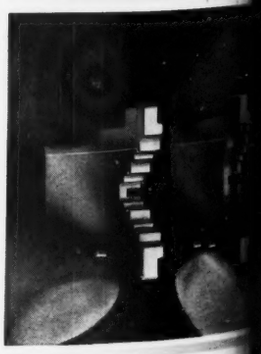
2. **Any number of type faces, up to 16 Alphabets and 4 Point Sizes of Slugs can be set without changing magazines on the New Intertype Mixer —Model F. The operator merely shifts a Light-Touch Finger Lever for Instant Change of Face.**



3. **Three Quick Turns of a Handle Located ABOVE the Keyboard Changes the Magazines with the New Intertype Main Magazine Shift and Channel Entrance Control. This Greater Convenience Increases Production.**



4. **Fast Composition is facilitated with Intertype Wide Tooth Matrices because the Wide Teeth Reduce Distributor Stops to a Minimum. These Modern Matrices Last Long, Cost No More and Run In Other Line Composing Machines.**



INTERTYPE CORPORATION, 360 Furman Street, Brooklyn, New York • Branch Offices in Chicago
San Francisco, Los Angeles, New Orleans, Boston • Distributors Throughout the World